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Val Ser Phe Ser Cys Asp Pro Gly Tyr Ser Leu Arg Gly Ser Glu Glu
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Leu Leu Cys Leu Ser Gly Glu Arg Arg Thr Trp Asp Arg Pro Leu Pro
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Thr Cys Val Ala Glu Cys Gly Gly Thr Val Arg Gly Glu Val Ser Gly
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Gln Val Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Glu His Asn Leu Asn
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Cys Ile Trp Thr Ile Glu Ala Glu Ala Gly Cys Thr Ile Gly Leu His
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Asp Gly Pro Val Glu Ser Gly Val Leu Leu Lys Glu Leu Ser Gly Pro
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Ala Leu Pro Lys Asp Leu His Ser Thr Phe Asn Ser Val Val Leu Gln
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Ser Val Ser Thr Ala Thr Ser Cys Asn Asp Pro Gly Ile Pro Gln Asn
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Val Lys Ile Glu Asn Arg Phe Phe Trp Gln Pro Ser Pro Pro Thr Cys
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Ile Ala Pro Cys Gly Gly Asp Leu Thr Gly Pro Ser Gly Val Ile Leu
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Ser Pro Asn Tyr Pro Glu Pro Tyr Pro Pro Gly Lys Glu Cys Asp Trp
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Lys Val Thr Val Ser Pro Asp Tyr Val Ile Ala Leu Val Phe Asn Ile
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Phe Asn Leu Glu Pro Gly Tyr Asp Phe Leu His Ile Tyr Asp Gly Arg
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Asp Ala Ser Val Ser Asn Ala Gly Phe Val Ile Asp Tyr Thr Glu Asn
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Pro Arg Glu Ser Cys Phe Asp Pro Gly Ser Ile Lys Asn Gly Thr Arg
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Val Gly Ser Asp Leu Lys Leu Gly Ser Ser Val Thr Tyr Tyr Cys His
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Gly Gly Tyr Glu Val Glu Gly Thr Ser Thr Leu Ser Cys Ile Leu Gly
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Pro Asp Gly Lys Pro Val Trp Asn Asn Pro Arg Pro Val Cys Thr Ala
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Pro Cys Gly Gly Gln Tyr Val Gly Ser Asp Gly Val Val Leu Ser Pro
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Asn Tyr Pro Gln Asn Tyr Thr Ser Gly Gln Ile Cys Leu Tyr Phe Val
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Thr Val Pro Lys Asp Tyr Val Val Phe Gly Gln Phe Ala Phe Phe His
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Thr Ala Leu Asn Asp Val Val Glu Val His Asp Gly His Ser Gln His
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Ser Arg Leu Leu Ser Ser Leu Ser Gly Ser His Thr Gly Glu Ser Leu
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Pro Leu Ala Thr Ser Asn Gln Val Leu Ile Lys Phe Ser Ala Lys Gly
            1460                1465                1470

Leu Ala Pro Ala Arg Gly Phe His Phe Val Tyr Gln Ala Val Pro Arg
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Thr Ser Ala Thr Gln Cys Ser Ser Val Pro Glu Pro Arg Tyr Gly Lys
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Arg Leu Gly Ser Asp Phe Ser Val Gly Ala Ile Val Arg Phe Glu Cys
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Asn Ser Gly Tyr Ala Leu Gln Gly Ser Pro Glu Ile Glu Cys Leu Pro
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Val Pro Gly Ala Leu Ala Gln Trp Asn Val Ser Ala Pro Thr Cys Val
            1540                1545                1550

Val Pro Cys Gly Gly Asn Leu Thr Glu Arg Arg Gly Thr Ile Leu Ser
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Ile Val Val Pro Glu Gly Ala Gly Ile Gln Ile Gln Val Val Ser Phe
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Val Thr Glu Gln Asn Trp Asp Ser Leu Glu Val Phe Asp Gly Ala Asp
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Asn Thr Val Thr Met Leu Gly Ser Phe Ser Gly Thr Thr Val Pro Ala
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Leu Leu Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe Tyr Ser Asp
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Ile Ser Val Ser Ala Ala Gly Phe His Leu Glu Tyr Lys Thr Val Gly
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Leu Ser Ser Cys Pro Glu Pro Ala Val Pro Ser Asn Gly Val Lys Thr
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Gly Glu Arg Tyr Leu Val Asn Asp Val Val Ser Phe Gln Cys Glu Pro
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Gly Tyr Ala Leu Gln Gly His Ala His Ile Ser Cys Met Pro Gly Thr
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Val Arg Arg Trp Asn Tyr Pro Pro Pro Leu Cys Ile Ala Gln Cys Gly
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Gly Thr Val Glu Glu Met Glu Gly Val Ile Leu Ser Pro Gly Phe Pro
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Gly Asn Tyr Pro Ser Asn Met Asp Cys Ser Trp Lys Ile Ala Leu Pro
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Val Gly Phe Gly Ala His Ile Gln Phe Leu Asn Phe Ser Thr Glu Pro
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Asn His Asp Tyr Ile Glu Ile Arg Asn Gly Pro Tyr Glu Thr Ser Arg
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Met Met Gly Arg Phe Ser Gly Ser Glu Leu Pro Ser Ser Leu Leu Ser
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Thr Ser His Glu Thr Thr Val Tyr Phe His Ser Asp His Ser Gln Asn
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Arg Pro Gly Phe Lys Leu Glu Tyr Gln Ala Tyr Glu Leu Gln Glu Cys
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Pro Asp Pro Glu Pro Phe Ala Asn Gly Ile Val Arg Gly Ala Gly Tyr
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Ser Ser Asn Gly Thr Val Tyr Ser Pro Gly Phe Pro Ser Pro Tyr Ser
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Ser Ser Gln Asp Cys Val Trp Leu Ile Thr Val Pro Ile Gly His Gly
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Val Arg Leu Asn Leu Ser Leu Leu Gln Thr Glu Pro Ser Gly Asp Phe
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Ile Thr Ile Trp Asp Gly Pro Gln Gln Thr Ala Pro Arg Leu Gly Val
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Phe Thr Arg Ser Met Ala Lys Lys Thr Val Gln Ser Ser Ser Asn Gln
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Val Leu Leu Lys Phe His Arg Asp Ala Ala Thr Gly Gly Ile Phe Ala
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Ile Ala Phe Ser Ala Tyr Pro Leu Thr Lys Cys Pro Pro Pro Thr Ile
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Leu Pro Asn Ala Glu Val Val Thr Glu Asn Glu Glu Phe Asn Ile Gly
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Asp Ile Val Arg Tyr Arg Cys Leu Pro Gly Phe Thr Leu Val Gly Asn
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His Phe Gly Cys Asn Ala Gly Tyr Arg Leu Val Gly His Ser Met Ala
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Pro Leu Cys Gln Ala Leu Ser Cys Gly Leu Pro Glu Ala Pro Lys Asn
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His Arg Ile Gly Thr Leu Ser Val Tyr Gly Ala Thr Ala Ile Phe Ser
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Val Pro Gly Tyr Met Met Glu Ser His Arg Val Ser Val Leu Ser Cys
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Thr Lys Asp Arg Thr Trp Asn Gly Thr Lys Pro Val Cys Lys Ala Leu
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Met Cys Lys Pro Pro Pro Leu Ile Pro Asn Gly Lys Val Val Gly Ser
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Asp Phe Met Trp Gly Ser Ser Val Thr Tyr Ala Cys Leu Glu Gly Tyr
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Gln Leu Ser Leu Pro Ala Val Phe Thr Cys Glu Gly Asn Gly Ser Trp
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Val Pro Ser Arg Gly Arg Arg Glu Asp Arg Gly Phe Ser Tyr Arg Ser
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Arg Arg Phe Cys Gln Ser Asp Gly Thr Trp Ser Gly Thr Gln Pro Ser
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Cys Ile Asp Pro Thr Leu Thr Thr Cys Ala Asp Pro Gly Val Pro Gln
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Phe Gly Ile Gln Asn Asn Ser Gln Gly Tyr Gln Val Gly Ser Thr Val
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Leu Phe Arg Cys Gln Lys Gly Tyr Leu Leu Gln Gly Ser Thr Thr Arg
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Thr Cys Leu Pro Asn Leu Thr Trp Ser Gly Thr Pro Pro Asp Cys Val
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Pro His His Cys Arg Gln Pro Glu Thr Pro Thr His Ala Asn Val Gly
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Ala Leu Asp Leu Pro Ser Met Gly Tyr Thr Leu Ile Thr Pro Ala Arg
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<213> Homo sapiens

<400> 4

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Ser Glu Leu Val Lys Lys Gln Ile Glu Leu Lys Ser Arg Gly Val Lys
         35                  40                  45

Leu Met Pro Ser Lys Asp Asn Ser Gln Lys Thr Ser Val Leu Thr Gln
     50                  55                  60

Val Gly Val Ser Gln Gly His Asn Met Cys Pro Asp Pro Gly Ile Pro
 65                  70                  75                  80

Glu Arg Gly Lys Arg Leu Gly Ser Asp Phe Arg Leu Gly Ser Ser Val
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                85                  90                  95

Gln Phe Thr Cys Asn Glu Gly Tyr Asp Leu Gln Gly Ser Lys Arg Ile
            100                 105                 110

Thr Cys Met Lys Val Ser Asp Met Phe Ala Ala Trp Ser Asp His Arg
        115                 120                 125

Pro Val Cys Arg Ala Arg Met Cys Asp Ala His Leu Arg Gly Pro Ser
    130                 135                 140

Gly Ile Ile Thr Ser Pro Asn Phe Pro Ile Gln Tyr Asp Asn Asn Ala
145                 150                 155                 160

His Cys Val Trp Ile Ile Thr Ala Leu Asn Pro Ser Lys Val Ile Lys
                165                 170                 175

Leu Ala Phe Glu Glu Phe Asp Leu Glu Arg Gly Tyr Asp Thr Leu Thr
            180                 185                 190

Val Gly Asp Gly Gly Gln Asp Gly Asp Gln Lys Thr Val Leu Tyr Met
        195                 200                 205

Ser Gln Asn Ala Cys Ser Asp Ser Pro His Thr Pro Gly Ser Arg Ile
    210                 215                 220

Pro Glu Ser Met Ser Gly Asp Ile Trp Arg Gln Lys Trp Thr Val Leu
225                 230                 235                 240

Glu Ile Cys Arg Asp Ile Ser Ser Ser Asp Ala Arg Ser Gly Ser Val
                245                 250                 255

Arg Lys Ser Pro Lys Thr Ser Asn Ala Val Glu Leu Val Ala Pro Gly
            260                 265                 270

Thr Glu Ile Glu Gln Gly Ser Cys Gly Asp Pro Gly Ile Pro Ala Tyr
        275                 280                 285

Gly Arg Arg Glu Gly Ser Arg Phe His His Gly Asp Thr Leu Lys Phe
    290                 295                 300

Glu Cys Gln Pro Ala Phe Glu Leu Val Gly Gln Lys Ala Ile Thr Cys
305                 310                 315                 320

Gln Lys Asn Asn Gln Trp Ser Ala Lys Lys Pro Gly Cys Val Phe Ser
                325                 330                 335

Cys Phe Phe Asn Phe Thr Ser Pro Ser Gly Val Val Leu Ser Pro Asn
            340                 345                 350

Tyr Pro Glu Asp Tyr Gly Asn His Leu His Cys Val Trp Leu Ile Leu
        355                 360                 365

Ala Arg Pro Glu Ser Arg Ile His Leu Ala Phe Asn Asp Ile Asp Val
    370                 375                 380

Glu Pro Gln Phe Asp Phe Leu Val Ile Lys Asp Gly Ala Thr Ala Glu
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385 390 395 400

Ala Pro Val Leu Gly Thr Phe Ser Gly Asn Gln Leu Pro Ser Ser Ile
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Thr Ser Ser Gly His Val Ala Arg Leu Glu Phe Gln Thr Asp His Ser
420 425 430

Thr Gly Lys Arg Gly Phe Asn Ile Thr Phe Thr Thr Phe Arg His Asn
435 440 445

Glu Cys Pro Asp Pro Gly Val Pro Val Asn Gly Lys Arg Phe Gly Asp
450 455 460

Ser Leu Gln Leu Gly Ser Ser Ile Ser Phe Leu Cys Asp Glu Gly Phe
465 470 475 480

Leu Gly Thr Gln Gly Ser Glu Thr Ile Thr Cys Val Leu Lys Glu Gly
485 490 495

Ser Val Val Trp Asn Ser Ala Val Leu Arg Cys Glu Ala Pro Cys Gly
500 505 510

Gly His Leu Thr Ser Pro Ser Gly Thr Ile Leu Ser Pro Gly Trp Pro
515 520 525

Gly Phe Tyr Lys Asp Ala Leu Ser Cys Ala Trp Val Ile Glu Ala Gln
530 535 540

Pro Gly Tyr Pro Ile Lys Ile Thr Phe Asp Arg Phe Lys Thr Glu Val
545 550 555 560

Asn Tyr Asp Thr Leu Glu Val Arg Asp Gly Arg Thr Tyr Ser Ala Pro
565 570 575

Leu Ile Gly Val Tyr His Gly Thr Gln Val Pro Gln Phe Leu Ile Ser
580 585 590

Thr Ser Asn Tyr Leu Tyr Leu Leu Phe Ser Thr Asp Lys Ser His Ser
595 600 605

Asp Ile Gly Phe Gln Leu Arg Tyr Glu Thr Ile Thr Leu Gln Ser Asp
610 615 620

His Cys Leu Asp Pro Gly Ile Pro Val Asn Gly Gln Arg His Gly Asn
625 630 635 640

Asp Phe Tyr Val Gly Ala Leu Val Thr Phe Ser Cys Asp Ser Gly Tyr
645 650 655

Thr Leu Ser Asp Gly Glu Pro Leu Glu Cys Glu Pro Asn Phe Gln Trp
660 665 670

Ser Arg Ala Leu Pro Ser Cys Glu Ala Leu Cys Gly Gly Phe Ile Gln
675 680 685

Gly Ser Ser Gly Thr Ile Leu Ser Pro Gly Phe Pro Asp Phe Tyr Pro

690 695 700

Asn Asn Leu Asn Cys Thr Trp Ile Ile Glu Thr Ser His Gly Lys Gly
705 710 715 720

Val Phe Phe Thr Phe His Thr Phe His Leu Glu Ser Gly His Asp Tyr
725 730 735

Leu Leu Ile Thr Glu Asn Gly Ser Phe Thr Gln Pro Leu Arg Gln Leu
740 745 750

Thr Gly Ser Arg Leu Pro Ala Pro Ile Ser Ala Gly Leu Tyr Gly Asn
755 760 765

Phe Thr Ala Gln Val Arg Phe Ile Ser Asp Phe Ser Met Ser Tyr Glu
770 775 780

Gly Phe Asn Ile Thr Phe Ser Glu Tyr Asp Leu Glu Pro Cys Glu Glu
785 790 795 800

Pro Glu Val Pro Ala Tyr Ser Ile Arg Lys Gly Leu Gln Phe Gly Val
805 810 815

Gly Asp Thr Leu Thr Phe Ser Cys Phe Pro Gly Tyr Arg Leu Glu Gly
820 825 830

Thr Ala Arg Ile Thr Cys Leu Gly Gly Arg Arg Arg Leu Trp Ser Ser
835 840 845

Pro Leu Pro Arg Cys Val Ala Glu Cys Gly Asn Ser Val Thr Gly Thr
850 855 860

Gln Gly Thr Leu Leu Ser Pro Asn Phe Pro Val Asn Tyr Asn Asn Asn
865 870 875 880

His Glu Cys Ile Tyr Ser Ile Gln Thr Gln Pro Gly Lys Gly Ile Gln
885 890 895

Leu Lys Ala Arg Ala Phe Glu Leu Ser Glu Gly Asp Val Leu Lys Val
900 905 910

Tyr Asp Gly Asn Asn Asn Ser Ala Arg Leu Leu Gly Val Phe Ser His
915 920 925

Ser Glu Met Met Gly Val Thr Leu Asn Ser Thr Ser Ser Ser Leu Trp
930 935 940

Leu Asp Phe Ile Thr Asp Ala Glu Asn Thr Ser Lys Gly Phe Glu Leu
945 950 955 960

His Phe Ser Ser Phe Glu Leu Ile Lys Cys Glu Asp Pro Gly Thr Pro
965 970 975

Lys Phe Gly Tyr Lys Val His Asp Glu Gly His Phe Ala Gly Ser Ser
980 985 990

Val Ser Phe Ser Cys Asp Pro Gly Tyr Ser Leu Arg Gly Ser Glu Glu

995 1000 1005

Leu Leu Cys Leu Ser Gly Glu Arg Arg Thr Trp Asp Arg Pro Leu Pro
1010 1015 1020

Thr Cys Val Ala Glu Cys Gly Gly Thr Val Arg Gly Glu Val Ser Gly
1025 1030 1035 1040

Gln Val Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Glu His Asn Leu Asn
1045 1050 1055

Cys Ile Trp Thr Ile Glu Ala Glu Ala Gly Cys Thr Ile Gly Leu His
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Phe Leu Val Phe Asp Thr Glu Glu Val His Asp Val Leu Arg Ile Trp
1075 1080 1085

Asp Gly Pro Val Glu Ser Gly Val Leu Leu Lys Glu Leu Ser Gly Pro
1090 1095 1100

Ala Leu Pro Lys Asp Leu His Ser Thr Phe Asn Ser Val Val Leu Gln
1105 1110 1115 1120

Phe Ser Thr Asp Phe Phe Thr Ser Lys Gln Gly Phe Ala Ile Gln Phe
1125 1130 1135

Ser Val Ser Thr Ala Thr Ser Cys Asn Asp Pro Gly Ile Pro Gln Asn
1140 1145 1150

Gly Ser Arg Ser Gly Asp Ser Trp Glu Ala Gly Asp Ser Thr Val Phe
1155 1160 1165

Gln Cys Asp Pro Gly Tyr Ala Leu Gln Gly Ser Ala Glu Ile Ser Cys
1170 1175 1180

Val Lys Ile Glu Asn Arg Phe Phe Trp Gln Pro Ser Pro Pro Thr Cys
1185 1190 1195 1200

Ile Ala Pro Cys Gly Gly Asp Leu Thr Gly Pro Ser Gly Val Ile Leu
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Ser Pro Asn Tyr Pro Glu Pro Tyr Pro Pro Gly Lys Glu Cys Asp Trp
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Lys Val Thr Val Ser Pro Asp Tyr Val Ile Ala Leu Val Phe Asn Ile
1235 1240 1245

Phe Asn Leu Glu Pro Gly Tyr Asp Phe Leu His Ile Tyr Asp Gly Arg
1250 1255 1260

Asp Ser Leu Ser Pro Leu Ile Gly Ser Phe Tyr Gly Ser Gln Leu Pro
1265 1270 1275 1280

Gly Arg Ile Glu Ser Ser Ser Asn Ser Leu Phe Leu Ala Phe Arg Ser
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Asp Ala Ser Val Ser Asn Ala Gly Phe Val Ile Asp Tyr Thr Glu Asn

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Pro Arg Glu Ser Cys Phe Asp Pro Gly Ser Ile Lys Asn Gly Thr Arg
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Val Gly Ser Asp Leu Lys Leu Gly Ser Ser Val Thr Tyr Tyr Cys His
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Gly Gly Tyr Glu Val Glu Gly Thr Ser Thr Leu Ser Cys Ile Leu Gly
1345 1350 1355 1360

Pro Asp Gly Lys Pro Val Trp Asn Asn Pro Arg Pro Val Cys Thr Ala
1365 1370 1375

Pro Cys Gly Gly Gln Tyr Val Gly Ser Asp Gly Val Val Leu Ser Pro
1380 1385 1390

Asn Tyr Pro Gln Asn Tyr Thr Ser Gly Gln Ile Cys Leu Tyr Phe Val
1395 1400 1405

Thr Val Pro Lys Asp Tyr Val Val Phe Gly Gln Phe Ala Phe Phe His
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Thr Ala Leu Asn Asp Val Val Glu Val His Asp Gly His Ser Gln His
1425 1430 1435 1440

Ser Arg Leu Leu Ser Ser Leu Ser Gly Ser His Thr Gly Glu Ser Leu
1445 1450 1455

Pro Leu Ala Thr Ser Asn Gln Val Leu Ile Lys Phe Ser Ala Lys Gly
1460 1465 1470

Leu Ala Pro Ala Arg Gly Phe His Phe Val Tyr Gln Ala Val Pro Arg
1475 1480 1485

Thr Ser Ala Thr Gln Cys Ser Ser Val Pro Glu Pro Arg Tyr Gly Lys
1490 1495 1500

Arg Leu Gly Ser Asp Phe Ser Val Gly Ala Ile Val Arg Phe Glu Cys
1505 1510 1515 1520

Asn Ser Gly Tyr Ala Leu Gln Gly Ser Pro Glu Ile Glu Cys Leu Pro
1525 1530 1535

Val Pro Gly Ala Leu Ala Gln Trp Asn Val Ser Ala Pro Thr Cys Val
1540 1545 1550

Val Pro Cys Gly Gly Asn Leu Thr Glu Arg Arg Gly Thr Ile Leu Ser
1555 1560 1565

Pro Gly Phe Pro Glu Pro Tyr Leu Asn Ser Leu Asn Cys Val Trp Lys
1570 1575 1580

Ile Val Val Pro Glu Gly Ala Gly Ile Gln Ile Gln Val Val Ser Phe
1585 1590 1595 1600

Val Thr Glu Gln Asn Trp Asp Ser Leu Glu Val Phe Asp Gly Ala Asp

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                1605                1610                1615

Asn Thr Val Thr Met Leu Gly Ser Phe Ser Gly Thr Thr Val Pro Ala
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Leu Leu Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe Tyr Ser Asp
        1635                1640                1645

Ile Ser Val Ser Ala Ala Gly Phe His Leu Glu Tyr Lys Thr Val Gly
    1650                1655                1660

Leu Ser Ser Cys Pro Glu Pro Ala Val Pro Ser Asn Gly Val Lys Thr
1665                1670                1675                1680

Gly Glu Arg Tyr Leu Val Asn Asp Val Val Ser Phe Gln Cys Glu Pro
                1685                1690                1695

Gly Tyr Ala Leu Gln Gly His Ala His Ile Ser Cys Met Pro Gly Thr
            1700                1705                1710

Val Arg Arg Trp Asn Tyr Pro Pro Pro Leu Cys Ile Ala Gln Cys Gly
        1715                1720                1725

Gly Thr Val Glu Glu Met Glu Gly Val Ile Leu Ser Pro Gly Phe Pro
    1730                1735                1740

Gly Asn Tyr Pro Ser Asn Met Asp Cys Ser Trp Lys Ile Ala Leu Pro
1745                1750                1755                1760

Val Gly Phe Gly Ala His Ile Gln Phe Leu Asn Phe Ser Thr Glu Pro
                1765                1770                1775

Asn His Asp Tyr Ile Glu Ile Arg Asn Gly Pro Tyr Glu Thr Ser Arg
            1780                1785                1790

Met Met Gly Arg Phe Ser Gly Ser Glu Leu Pro Ser Ser Leu Leu Ser
        1795                1800                1805

Thr Ser His Glu Thr Thr Val Tyr Phe His Ser Asp His Ser Gln Asn
    1810                1815                1820

Arg Pro Gly Phe Lys Leu Glu Tyr Gln Ala Tyr Glu Leu Gln Glu Cys
1825                1830                1835                1840

Pro Asp Pro Glu Pro Phe Ala Asn Gly Ile Val Arg Gly Ala Gly Tyr
                1845                1850                1855

Asn Val Gly Gln Ser Val Thr Phe Glu Cys Leu Pro Gly Tyr Gln Leu
            1860                1865                1870

Thr Gly His Pro Val Leu Thr Cys Gln His Gly Thr Asn Arg Asn Trp
        1875                1880                1885

Asp His Pro Leu Pro Lys Cys Glu Val Pro Cys Gly Gly Asn Ile Thr
    1890                1895                1900

Ser Ser Asn Gly Thr Val Tyr Ser Pro Gly Phe Pro Ser Pro Tyr Ser
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1905 1910 1915 1920

Ser Ser Gln Asp Cys Val Trp Leu Ile Thr Val Pro Ile Gly His Gly
1925 1930 1935

Val Arg Leu Asn Leu Ser Leu Leu Gln Thr Glu Pro Ser Gly Asp Phe
1940 1945 1950

Ile Thr Ile Trp Asp Gly Pro Gln Gln Thr Ala Pro Arg Leu Gly Val
1955 1960 1965

Phe Thr Arg Ser Met Ala Lys Lys Thr Val Gln Ser Ser Ser Asn Gln
1970 1975 1980

Val Leu Leu Lys Phe His Arg Asp Ala Ala Thr Gly Gly Ile Phe Ala
1985 1990 1995 2000

Ile Ala Phe Ser Ala Tyr Pro Leu Thr Lys Cys Pro Pro Pro Thr Ile
2005 2010 2015

Leu Pro Asn Ala Glu Val Val Thr Glu Asn Glu Glu Phe Asn Ile Gly
2020 2025 2030

Asp Ile Val Arg Tyr Arg Cys Leu Pro Gly Phe Thr Leu Val Gly Asn
2035 2040 2045

Glu Ile Leu Thr Cys Lys Leu Gly Thr Tyr Leu Gln Phe Glu Gly Pro
2050 2055 2060

Pro Pro Ile Cys Glu Val His Cys Pro Thr Asn Glu Leu Leu Thr Asp
2065 2070 2075 2080

Ser Thr Gly Val Ile Leu Ser Gln Ser Tyr Pro Gly Ser Tyr Pro Gln
2085 2090 2095

Phe Gln Thr Cys Ser Trp Leu Val Arg Val Glu Pro Asp Tyr Asn Ile
2100 2105 2110

Ser Leu Thr Val Glu Tyr Phe Leu Ser Glu Lys Gln Tyr Asp Glu Phe
2115 2120 2125

Glu Ile Phe Asp Gly Pro Ser Gly Gln Ser Pro Leu Leu Lys Ala Leu
2130 2135 2140

Ser Gly Asn Tyr Ser Ala Pro Leu Ile Val Thr Ser Ser Ser Asn Ser
2145 2150 2155 2160

Val Tyr Leu Arg Trp Ser Ser Asp His Ala Tyr Asn Arg Lys Gly Phe
2165 2170 2175

Lys Ile Arg Tyr Ser Ala Pro Tyr Cys Ser Leu Pro Arg Ala Pro Leu
2180 2185 2190

His Gly Phe Ile Leu Gly Gln Thr Ser Thr Gln Pro Gly Gly Ser Ile
2195 2200 2205

His Phe Gly Cys Asn Ala Gly Tyr Arg Leu Val Gly His Ser Met Ala

2210 2215 2220

Ile Cys Thr Arg His Pro Gln Gly Tyr His Leu Trp Ser Glu Ala Ile
2225 2230 2235 2240

Pro Leu Cys Gln Ala Leu Ser Cys Gly Leu Pro Glu Ala Pro Lys Asn
2245 2250 2255

Gly Met Val Phe Gly Lys Glu Tyr Thr Val Gly Thr Lys Ala Met Tyr
2260 2265 2270

Ser Cys Ser Glu Gly Tyr His Leu Gln Ala Gly Ala Glu Ala Thr Ala
2275 2280 2285

Glu Cys Leu Asp Thr Gly Leu Trp Ser Asn Arg Asn Val Pro Pro Gln
2290 2295 2300

Cys Val Arg Glu Ser Ser Gly Asn Gly Gly Gly Ser Val Thr Cys Pro
2305 2310 2315 2320

Asp Val Ser Ser Ile Ser Val Glu His Gly Arg Trp Arg Leu Ile Phe
2325 2330 2335

Glu Thr Gln Tyr Gln Phe Gln Ala Gln Leu Met Leu Ile Cys Asp Pro
2340 2345 2350

Gly Tyr Tyr Tyr Thr Gly Gln Arg Val Ile Arg Cys Gln Ala Asn Gly
2355 2360 2365

Lys Trp Ser Leu Gly Asp Ser Thr Pro Thr Cys Arg Ile Ile Ser Cys
2370 2375 2380

Gly Glu Leu Pro Ile Pro Pro Asn Gly His Arg Ile Gly Thr Leu Ser
2385 2390 2395 2400

Val Tyr Gly Ala Thr Ala Ile Phe Ser Cys Asn Ser Gly Tyr Thr Leu
2405 2410 2415

Val Gly Ser Arg Val Arg Glu Cys Met Ala Asn Gly Leu Trp Ser Gly
2420 2425 2430

Ser Glu Val Arg Cys Leu Ala Thr Gln Thr Lys Leu His Ser Ile Phe
2435 2440 2445

Tyr Lys Leu Leu Phe Asp Val Leu Ser Ser Pro Ser Leu Thr Lys Ala
2450 2455 2460

Gly His Cys Gly Thr Pro Glu Pro Ile Val Asn Gly His Ile Asn Gly
2465 2470 2475 2480

Glu Asn Tyr Ser Tyr Arg Gly Ser Val Val Tyr Gln Cys Asn Ala Gly
2485 2490 2495

Phe Arg Leu Ile Gly Met Ser Val Arg Ile Cys Gln Gln Asp His His
2500 2505 2510

Trp Ser Gly Lys Thr Pro Phe Cys Val His Val Lys Gln Gln Leu Leu

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       2515                2520                2525

Leu Leu Leu Leu Leu Leu Cys Asp Asp Asp Asp Asp Glu Asp Asp Gly
   2530                2535                2540

Ser Gly Ala Ile Thr Cys Gly His Pro Gly Asn Pro Val Asn Gly Leu
2545                2550                2555                2560

Thr Gln Gly Asn Gln Phe Asn Leu Asn Asp Val Val Lys Phe Val Cys
               2565                2570                2575

Asn Pro Gly Tyr Met Ala Glu Gly Ala Ala Arg Ser Gln Cys Leu Ala
           2580                2585                2590

Ser Gly Gln Trp Ser Asp Met Leu Pro Thr Cys Arg Ile Ile Asn Cys
       2595                2600                2605

Thr Asp Pro Gly His Gln Glu Asn Ser Val Arg Gln Val His Ala Ser
   2610                2615                2620

Gly Pro His Arg Phe Ser Phe Gly Thr Thr Val Ser Tyr Arg Cys Asn
2625                2630                2635                2640

His Gly Phe Tyr Leu Leu Gly Thr Pro Val Leu Ser Cys Gln Gly Asp
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Gly Thr Trp Asp Arg Pro Arg Pro Gln Cys Leu Cys Lys
           2660                2665


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gaatagtgaa ccccagttac caccactgat tagtcataac cggtattacc cctatctact 180
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Glu Ile Arg Ala Asp Ala His Val Arg Gly Tyr Val Gly Glu Lys Ile
         35                  40                  45

Lys Leu Lys Cys Thr Phe Lys Ser Thr Ser Asp Val Thr Asp Lys Leu
     50                  55                  60

Thr Ile Asp Trp Thr Tyr Arg Pro Pro Ser Ser Ser His Thr Val Ser
 65                  70                  75                  80

Ile Phe His Tyr Gln Ser Phe Gln Tyr Pro Thr Thr Ala Gly Thr Phe
                 85                  90                  95

Arg Asp Arg Ile Ser Trp Val Gly Asn Val Tyr Lys Gly Asp Ala Ser
            100                 105                 110

Ile Ser Ile Ser Asn Pro Thr Ile Lys Asp Asn Gly Thr Phe Ser Cys
        115                 120                 125

Ala Val Lys Asn Pro Pro Asp Val His His Asn Ile Pro Met Thr Glu
    130                 135                 140

Leu Thr Val Thr Glu Arg Gly Phe Gly Thr Met Leu Ser Ser Val Ala
145                 150                 155                 160

Leu Leu Ser Ile Leu Val Phe Val Pro Ser Ala Val Val Val Ala Leu
                165                 170                 175

Leu Leu Val Arg Met Gly Arg Lys Ala Ala Gly Leu Lys Lys Arg Ser
            180                 185                 190

Arg Ser Gly Tyr Lys Lys Ser Ser Ile Glu Val Ser Asp Asp Thr Asp
        195                 200                 205

Gln Glu Glu Glu Glu Ala Cys Met Ala Arg Leu Val Ser Val Ala Leu
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Ser Ala Trp Ile Gln Thr Met Lys Arg His Ile Asp Glu Ser Leu Tyr
225                 230                 235                 240
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Asp Thr Arg Arg Val Thr
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<213> Homo sapiens

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gcaataataa aggttatata tacatatatt tatcttggta acctgagggc taaaaacgtg 180
gaatacgata attcttctca agaggtccat agggccggcg gccgcaggtc acgaagcctc 240
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Trp Ser Leu Val Leu Arg Ala Gly Cys Leu Ala His Gly Glu Glu His
         35                  40                  45

Pro Glu Gly Ser Arg Trp Val Pro Pro Asp Ser Ala Cys Ser Ser Cys
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     50                  55                  60

Val Cys His Glu Gly Val Val Thr Cys Ala Arg Ile Gln Cys Ile Ser
 65                  70                  75                  80

Ser Cys Ala Gln Pro Arg Gln Gly Pro His Asp Cys Cys Pro Gln Cys
                 85                  90                  95

Ser Asp Cys Glu His Glu Gly Arg Lys Tyr Glu Pro Gly Glu Ser Phe
            100                 105                 110

Gln Pro Gly Ala Asp Pro Cys Glu Val Cys Ile Cys Glu Pro Gln Pro
        115                 120                 125

Glu Gly Pro Pro Ser Leu Arg Cys His Arg Arg Gln Cys Pro Ser Leu
    130                 135                 140

Val Gly Cys Pro Pro Ser Gln Leu Leu Pro Pro Gly Pro Gln His Cys
145                 150                 155                 160

Cys Pro Thr Cys Ala Glu Ala Leu Ser Asn Cys Ser Glu Gly Leu Leu
                165                 170                 175

Gly Ser Glu Leu Ala Pro Pro Asp Pro Cys Tyr Thr Cys Gln Cys Gln
            180                 185                 190

Asp Leu Thr Trp Leu Cys Ile His Gln Ala Cys Pro Glu Leu Ser Cys
        195                 200                 205

Pro Leu Ser Glu Arg His Thr Pro Pro Gly Ser Cys Cys Pro Val Cys
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Arg Glu Cys Val Val Glu Ala Glu Gly Arg Arg Val Ala Asp Gly Glu
225                 230                 235                 240

Ser Trp Arg Asp Pro Ser Asn Ala Cys Ile Ala Cys Thr Cys His Arg
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Gly His Val Glu Cys His Leu Glu Glu Cys Gln Ala Leu Ser Cys Pro
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His Gly Trp Ala Lys Val Pro Gln Ala Asp Ser Cys Cys Glu Arg Cys
        275                 280                 285

Gln Ala Pro Thr Gln Ser Cys Val His Gln Gly Arg Glu Val Ala Ser
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Gly Glu Arg Trp Thr Val Asp Thr Cys Thr Ser Cys Ser Cys Met Ala
305                 310                 315                 320

Gly Thr Val Arg Cys Gln Ser Gln Arg Cys Ser Pro Leu Ser Cys Gly
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Pro Asp Lys Ala Pro Ala Leu Ser Pro Gly Ser Cys Cys Pro Arg Cys
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Leu Pro Arg Pro Ala Ser Cys Met Ala Phe Gly Asp Pro His Tyr Arg
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Thr Phe Asp Gly Arg Leu Leu His Phe Gln Ser Ser Cys Ser Tyr Val
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385                 390                 395                 400

Asp Asp Arg Gly Arg Ser Ser Val Ala Trp Thr Gln Glu Val Ala Val
                405                 410                 415

Leu Leu Gly Asp Met Ala Val Arg Leu Leu Gln Asp Gly Ala Val Thr
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Val Asp Gly His Pro Val Ala Leu Pro Phe Leu Gln Glu Pro Leu Leu
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Tyr Val Glu Leu Arg Gly His Thr Val Ile Leu His Ala Gln Pro Gly
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Leu Gln Val Leu Trp Asp Gly Gln Ser Gln Val Glu Val Ser Val Pro
465                 470                 475                 480

Gly Ser Tyr Gln Gly Arg Thr Cys Gly Leu Cys Gly Asn Phe Asn Gly
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Phe Ala Gln Asp Asp Leu Gln Gly Pro Glu Gly Leu Leu Leu Pro Ser
            500                 505                 510

Glu Ala Ala Phe Gly Asn Ser Trp Gln Val Ser Glu Gly Leu Trp Pro
        515                 520                 525

Gly Arg Pro Cys Ser Ala Gly Arg Glu Val Asp Pro Cys Arg Ala Ala
    530                 535                 540

Gly Tyr Arg Ala Arg Arg Glu Ala Asn Ala Arg Cys Gly Val Leu Lys
545                 550                 555                 560

Ser Ser Pro Phe Ser Arg Cys His Ala Val Val Pro Pro Glu Pro Phe
                565                 570                 575

Phe Ala Ala Cys Val Tyr Asp Leu Cys Ala Cys Gly Pro Gly Ser Ser
            580                 585                 590

Ala Asp Ala Cys Leu Cys Asp Ala Leu Glu Ala Tyr Ala Ser His Cys
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Arg Gln Ala Gly Val Thr Pro Thr Trp Arg Gly Pro Thr Leu Cys Val
    610                 615                 620

Val Gly Cys Pro Leu Glu Arg Gly Phe Val Phe Asp Glu Cys Gly Pro
625                 630                 635                 640

Pro Cys Pro Arg Thr Cys Phe Asn Gln His Ile Pro Leu Gly Glu Leu
                645                 650                 655

Ala Ala His Cys Val Gln Glu Gly Arg Gly Tyr Pro Pro Gly Leu Glu
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Gln Leu Leu Trp Asp Leu Glu Leu Leu Thr Gly Val Glu Leu Gly Leu
690 695 700

Phe Trp Pro Pro Gln Ala Gln Phe Phe Gly Pro Arg Gly Gln Ala Gln
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Gln Ala Trp Ser Gln Cys Cys Gln Pro Gly Gly Ser Thr Gly Gly Asp
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Pro Glu Gln Pro Asp Leu Ala Gln Arg Glu Glu Arg Ser Glu Ala Glu
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Pro Glu Thr Gln Lys Arg Lys Leu Thr Pro Gly Thr Pro Gly Pro Gly
755 760 765

Asp Leu Pro Ser Gln Asn Leu Pro Ser Gln Asp Ala Leu Glu Gly Leu
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Gly Ser Asp Pro His Leu Gly Gln Glu Arg Ala Glu Leu Gln Arg Pro
785 790 795 800

Pro Arg Met Asp Thr Pro Glu Ser Glu Arg Arg Thr Leu Arg Ile Arg
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Lys Arg Arg Pro Leu Ser Pro Ser Glu Gly Leu Leu Arg Val Pro Glu
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Ser Thr Asp Ser Lys Ala Cys Gly Gln Gly Glu Pro Lys Pro Pro Glu
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Lys Asp Tyr His Ala Asp Ala Glu His Asp Gln Arg Arg Ala Thr Lys
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Val Gly Thr Gly Gly Gly Lys Ala Gly Gly Arg Pro Gly Gly Gly Val
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Gly Cys Ala Tyr Pro Pro Glu Ala Pro Gly Pro Ala Ala Ala Pro Arg
885 890 895

Ser Arg Ser Arg Ser Arg Asp Ala Ser Asp Pro Ala Arg Arg Gly Ile
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Arg Ala Ala Gly Ala Pro Arg Gly Ser Pro Gly Pro Pro Gly Leu Glu
915 920 925

Arg Asp Pro His Gly Leu Gln Gly Pro Gly Val Gly Pro Ala Pro Gly
930 935 940

Glu Gln Glu Ala Leu Lys Ala Ala Trp Pro Ala Pro Leu Ser Thr Ala
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Lys Ala Pro Ala Gly Leu Ser Ala Ala Gln Gln Val Thr Ala Leu Gln

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Arg Leu Leu Glu Leu His Ser Ala Ala Gly Gly Ser Ala Ala Ala Gly
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Gln Gly His Gln Tyr Gln Ser Gln Glu Thr Phe Arg Leu Gln Glu Arg
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Gly Leu Cys Val Arg Cys Ser Cys Gln Ala Gly Glu Val Ser Cys Glu
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Glu Gln Glu Cys Pro Val Thr Pro Cys Ala Leu Pro Ala Ser Gly Arg
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Gln Leu Cys Pro Ala Cys Glu Leu Asp Gly Glu Glu Phe Ala Glu Gly
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Val Gln Trp Glu Pro Asp Gly Arg Pro Cys Thr Ala Cys Val Cys Gln
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Asp Gly Val Pro Lys Cys Gly Ala Val Leu Cys Pro Pro Ala Pro Cys
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Gln His Pro Thr Gln Pro Pro Gly Ala Cys Cys Pro Ser Cys Asp Ser
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Cys Thr Tyr His Ser Gln Val Tyr Ala Asn Gly Gln Asn Phe Thr Asp
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Ala Asp Ser Pro Cys His Ala Cys His Cys Gln Asp Gly Thr Val Thr
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Cys Ser Leu Val Asp Cys Pro Pro Thr Thr Cys Ala Arg Pro Gln Ser
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Gly Pro Gly Gln Cys Cys Pro Arg Cys Pro Val Thr Thr Ala Pro Arg
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Pro Thr Thr Leu Gly Pro Pro Pro Pro Tyr Pro Pro Asp Cys Ile Leu
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Glu Glu Glu Val Phe Val Asp Gly Glu Ser Phe Ser His Pro Arg Asp
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Pro Cys Gln Glu Cys Arg Cys Gln Glu Gly His Ala His Cys Gln Pro
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Arg Pro Cys Pro Arg Ala Pro Cys Ala His Pro Leu Pro Gly Thr Cys
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Cys Pro Asn Asp Cys Ser Gly Cys Ala Phe Gly Gly Lys Glu Tyr Pro
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Ser Gly Ala Asp Phe Pro His Pro Ser Asp Pro Cys Arg Leu Cys Arg
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Cys Leu Ser Leu Ser Cys Cys Arg Glu Ser Ala Ala Arg Ser Ala Gln
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Glu Tyr Phe Ser Pro Pro Gly Asp Pro Cys Arg Arg Cys Leu Cys Leu
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Ala His Pro Arg Gln Gly Pro Cys Cys Pro Ser Cys Asp Gly Cys Leu
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Tyr Gln Gly Lys Glu Phe Ala Ser Gly Glu Arg Phe Pro Ser Pro Thr
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Ala Ala Cys His Leu Cys Leu Cys Trp Glu Gly Ser Val Ser Cys Glu
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Cys Cys Pro Asp Cys Asp Gly Cys Glu Tyr Leu Gly Glu Ser Tyr Leu
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Ser Asn Gln Glu Phe Pro Asp Pro Arg Glu Pro Cys Asn Leu Cys Thr
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Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met Leu Lys
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Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr Thr Val
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Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Pro Asn Lys Lys Leu
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Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met Lys Gly
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Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val Pro Arg
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Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn Val Ala
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Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His Phe Leu
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His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg Glu Ile
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Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys Thr Arg
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Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala Gly Pro
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Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly Met Val
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<212> PRT
<213> Homo sapiens

<400> 12

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Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
         35                  40                  45

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
     50                  55                  60

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
 65                  70                  75                  80

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
                 85                  90                  95

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
            100                 105                 110

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
        115                 120                 125

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
    130                 135                 140

Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
145                 150                 155                 160

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
                165                 170                 175

Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
            180                 185                 190
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Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser
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Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His
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Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg
225 230 235 240

Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg
245 250 255

Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu
260 265 270

Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val
275 280 285

Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp
290 295 300

Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr
305 310 315 320

Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp
325 330 335

Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro
340 345 350

Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg
355 360 365

Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser
370 375 380

Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu
385 390 395 400

Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys
405 410 415

Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala
420 425 430

Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly
435 440 445

Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp
450 455 460

Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser
465 470 475 480

Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys
485 490 495

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Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile
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Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile
        515                 520                 525

Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly
    530                 535                 540

Arg Val Thr Pro Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu
545                 550                 555                 560

Phe Gly Asn Thr Ala His Leu Gly Asp Cys His Ala Tyr Glu Pro Tyr
                565                 570                 575

Glu Gly Arg Val Gly Ser Leu Lys Ala Ile Cys Tyr Leu Leu Leu Phe
            580                 585                 590

Leu Lys Ser Thr Leu Phe Thr Leu Ser His Val Ser Ile Ser Gly Val
        595                 600                 605

Arg Trp Glu Val Gln Ser Gly Glu Ser Asn Gln Met Val His Met Asn
    610                 615                 620

Val Leu Ile Thr Cys Val Phe Ala Ala Phe Val Leu Gly Ala Phe Ile
625                 630                 635                 640

Ala Gly Val Ala Val Tyr Cys Tyr Arg Asp Met Phe Val Arg Lys Asn
                645                 650                 655

Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln Ser Cys Thr Asp Ser
            660                 665                 670

Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe Asp Ser Pro Val Lys
        675                 680                 685

Glu Tyr Gln Gln Asn Ile Asp Ser Pro Lys Leu Tyr Ser Asn Leu Leu
    690                 695                 700

Thr Ser Arg Lys Glu Leu Pro Pro Asn Gly Asp Thr Lys Ser Met Val
705                 710                 715                 720

Met Asp His Arg Gly Gln Pro Pro Glu Leu Ala Ala Leu Pro Thr Pro
                725                 730                 735

Glu Ser Thr Pro Val Leu His Gln Lys Thr Leu Gln Ala Met Lys Ser
            740                 745                 750

His Ser Glu Lys Ala His Gly His Gly Ala Ser Arg Lys Glu Thr Pro
        755                 760                 765

Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser Pro Leu Ser His Gly
    770                 775                 780

His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala Thr His Asp Tyr Asn
785                 790                 795                 800
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Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala Glu Lys Lys Leu Gln
                805                 810                 815

Asn Ile Asp His Pro Leu Thr Lys Ser Ser Ser Lys Arg Asp His Arg
            820                 825                 830

Arg Ser Val Asp Ser Arg Asn Thr Leu Asn Asp Leu Leu Lys His Leu
        835                 840                 845

Asn Asp Pro Asn Ser Asn Pro Lys Ala Ile Met Gly Asp Ile Gln Met
    850                 855                 860

Ala His Gln Asn Leu Met Leu Asp Pro Met Gly Ser Met Ser Glu Val
865                 870                 875                 880

Pro Pro Lys Val Pro Asn Arg Glu Ala Ser Leu Tyr Ser Pro Pro Ser
                885                 890                 895

Thr Leu Pro Arg Asn Ser Pro Thr Lys Arg Val Asp Val Pro Thr Thr
            900                 905                 910

Pro Gly Val Pro Met Thr Ser Leu Glu Arg Gln Arg Gly Tyr His Lys
        915                 920                 925

Asn Ser Ser Gln Arg His Ser Ile Ser Ala Met Pro Lys Asn Leu Asn
    930                 935                 940

Ser Pro Asn Gly Val Leu Leu Ser Arg Gln Pro Ser Met Asn Arg Gly
945                 950                 955                 960

Gly Tyr Met Pro Thr Pro Thr Gly Ala Lys Val Asp Tyr Ile Gln Gly
                965                 970                 975

Thr Pro Val Ser Val His Leu Gln Pro Ser Leu Ser Arg Gln Ser Ser
            980                 985                 990

Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly Leu Lys Arg Thr Pro
        995                1000                1005

Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Val Pro Gln Thr
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Pro Ser Val Arg Pro Leu Asn Lys Tyr Thr Tyr
1025                1030                1035


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<212> DNA
<213> Homo sapiens

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gatgatgaac cccttaatac tgtcgactat cactgtaagt cgtctaggca atatccggtt 180
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<210> 14
<211> 712
<212> PRT
<213> Homo sapiens

<400> 14

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             20                  25                  30

Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
         35                  40                  45

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
     50                  55                  60

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
 65                  70                  75                  80

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
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                85                  90                  95

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
            100                 105                 110

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
        115                 120                 125

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
    130                 135                 140

Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
145                 150                 155                 160

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
                165                 170                 175

Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
            180                 185                 190

Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser
        195                 200                 205

Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His
    210                 215                 220

Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg
225                 230                 235                 240

Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg
                245                 250                 255

Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu
            260                 265                 270

Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val
        275                 280                 285

Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp
    290                 295                 300

Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr
305                 310                 315                 320

Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp
                325                 330                 335

Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro
            340                 345                 350

Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg
        355                 360                 365

Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser
    370                 375                 380

Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu
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385 390 395 400

Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys
405 410 415

Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala
420 425 430

Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly
435 440 445

Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp
450 455 460

Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser
465 470 475 480

Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys
485 490 495

Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile
500 505 510

Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile
515 520 525

Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly
530 535 540

Arg Val Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe
545 550 555 560

His Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn
565 570 575

Thr Ala His Leu Gly Asp Cys His Glu Ile Leu Pro Thr Ser Thr Thr
580 585 590

Pro Asp Tyr Lys Ile Phe Gly Gly Pro Thr Ser Gly Val Arg Trp Glu
595 600 605

Val Gln Ser Gly Glu Ser Asn Gln Met Val His Met Asn Val Leu Ile
610 615 620

Thr Cys Val Phe Ala Ala Phe Val Leu Gly Ala Phe Ile Ala Gly Val
625 630 635 640

Ala Val Tyr Cys Tyr Arg Asp Met Phe Val Arg Lys Asn Arg Lys Ile
645 650 655

His Lys Asp Ala Glu Ser Ala Gln Ser Cys Thr Asp Ser Ser Gly Ser
660 665 670

Phe Ala Lys Leu Asn Gly Leu Phe Asp Ser Pro Val Lys Glu Tyr Gln
675 680 685

Gln Asn Ile Asp Ser Pro Lys Leu Tyr Ser Asn Leu Leu Thr Ser Arg

690 695 700

Lys Glu His Glu Phe Ser Gly Arg
705 710

<210> 15
<211> 3196
<212> DNA
<213> Homo sapiens

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<210> 16
<211> 1032
<212> PRT
<213> Homo sapiens

<400> 16
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             20                  25                  30

Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
         35                  40                  45

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
     50                  55                  60

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
 65                  70                  75                  80

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
                 85                  90                  95

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
            100                 105                 110

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
        115                 120                 125

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
    130                 135                 140

Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
145                 150                 155                 160

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
                165                 170                 175

Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
            180                 185                 190

Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser
        195                 200                 205

Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His
```

210 215 220

Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg
225 230 235 240

Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg
245 250 255

Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu
260 265 270

Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val
275 280 285

Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp
290 295 300

Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr
305 310 315 320

Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp
325 330 335

Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro
340 345 350

Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg
355 360 365

Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser
370 375 380

Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu
385 390 395 400

Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys
405 410 415

Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala
420 425 430

Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly
435 440 445

Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp
450 455 460

Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser
465 470 475 480

Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys
485 490 495

Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile
500 505 510

Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile

```
        515                 520                 525

Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly
    530                 535                 540

Arg Val Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe
545                 550                 555                 560

His Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn
                565                 570                 575

Thr Ala His Leu Gly Asp Cys His Glu Ile Leu Pro Thr Ser Thr Thr
            580                 585                 590

Pro Asp Tyr Lys Ile Phe Gly Gly Pro Thr Ser Gly Val Arg Trp Glu
        595                 600                 605

Val Gln Ser Gly Glu Ser Asn Gln Met Val His Met Asn Val Leu Ile
    610                 615                 620

Thr Cys Val Phe Ala Ala Phe Val Leu Gly Ala Phe Ile Ala Gly Val
625                 630                 635                 640

Ala Val Tyr Cys Tyr Arg Asp Met Phe Val Arg Lys Asn Arg Lys Ile
                645                 650                 655

His Lys Asp Ala Glu Ser Ala Gln Ser Cys Thr Asp Ser Ser Gly Ser
            660                 665                 670

Phe Ala Lys Leu Asn Gly Leu Phe Asp Ser Pro Val Lys Glu Tyr Gln
        675                 680                 685

Gln Asn Ile Asp Ser Pro Lys Leu Tyr Ser Asn Leu Leu Thr Ser Arg
    690                 695                 700

Lys Glu Leu Pro Pro Asn Gly Asp Ser Lys Ser Met Val Met Asp His
705                 710                 715                 720

Arg Gly Gln Pro Pro Glu Leu Ala Ala Leu Pro Thr Pro Glu Ser Thr
                725                 730                 735

Pro Val Leu His Gln Lys Thr Leu Gln Ala Met Lys Ser His Ser Glu
            740                 745                 750

Lys Ala His Gly His Gly Ala Ser Arg Lys Glu Thr Pro Gln Phe Phe
        755                 760                 765

Pro Ser Ser Pro Pro Pro His Ser Pro Leu Ser His Gly His Ile Pro
    770                 775                 780

Ser Ala Ile Val Leu Pro Asn Ala Thr His Asp Tyr Asn Thr Ser Phe
785                 790                 795                 800

Ser Asn Ser Asn Ala His Lys Ala Glu Lys Lys Leu Gln Asn Ile Asp
                805                 810                 815

His Pro Leu Thr Lys Ser Ser Ser Lys Arg Asp His Arg Arg Ser Val
```

```
            820                 825                 830

Asp Ser Arg Asn Thr Leu Asn Asp Leu Leu Lys His Leu Asn Asp Pro
        835                 840                 845

Asn Ser Asn Pro Lys Ala Ile Met Gly Asp Ile Gln Met Ala His Gln
    850                 855                 860

Asn Leu Met Leu Asp Pro Met Gly Ser Met Ser Glu Val Pro Pro Lys
865                 870                 875                 880

Val Pro Asn Arg Glu Ala Ser Leu Tyr Ser Pro Pro Ser Thr Leu Pro
                885                 890                 895

Arg Asn Ser Pro Thr Lys Arg Val Asp Val Pro Thr Thr Pro Gly Val
            900                 905                 910

Pro Met Thr Ser Leu Glu Arg Gln Arg Gly Tyr His Lys Asn Ser Ser
        915                 920                 925

Gln Arg His Ser Ile Ser Ala Met Pro Lys Asn Leu Asn Ser Pro Asn
    930                 935                 940

Gly Val Leu Leu Ser Arg Gln Pro Ser Met Asn Arg Gly Gly Tyr Met
945                 950                 955                 960

Pro Thr Pro Thr Gly Ala Lys Val Asp Tyr Ile Gln Gly Thr Pro Val
                965                 970                 975

Ser Val His Leu Gln Pro Ser Leu Ser Arg Gln Ser Ser Tyr Thr Ser
            980                 985                 990

Asn Gly Thr Leu Pro Arg Thr Gly Leu Lys Arg Thr Pro Ser Leu Lys
        995                1000                1005

Pro Asp Val Pro Pro Lys Pro Ser Phe Val Pro Gln Thr Pro Ser Val
   1010                1015                1020

Arg Pro Leu Asn Lys Tyr Thr Tyr
1025                1030
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<210> 17
<211> 2359
<212> DNA
<213> Homo sapiens

<400> 17
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gatgatgaac ccttaatac tgtcgactat cactgtaagt cgtctaggca atatccggtt 180
tttagaggac gcccttcagg caatgaatcg cagcacaggc tggactttca gctgatgttg 240
aaaattcgag acacacttta tattgctggc agggatcaag tttatacagt aaacttaaat 300
gaaatgccca aaacagaagt aatatggcaa cagaaactga catggcgatc aagacaacag 360
gatcgagaaa actgtgctat gaaaggcaag cataaagatg aatgccacaa ctttatcaaa 420
gtatttgttc caagaaacga tgagatggtt tttgtttgtg gtaccaatgc attcaatccc 480
atgtgtagat actacagggt aagtaccttа gaatatgatg gggaagaaat tagtggcctg 540

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gcaagatgcc catttgatgc cagacaaacc aatgttgccc tctttgctga tgggaagctg 600
tattctgcca cagtggctga cttcttggcc agcgatgccg ttatttatcg aagcatgggt 660
gatggatctg cccttcgcac aataaaatat gattccaaat ggataaaaga gccacacttt 720
cttcatgcca tagaatatgg aaactatgtc tatttcttct ttcgagaaat cgctgtcgaa 780
cataataatt taggcaaggc tgtgtattcc cgcgtggccc gcatatgtaa aaacgacatg 840
ggtggttccc agcgggtcct ggagaaacac tggacttcat ttctaaaggc tcggctgaac 900
tgttctgtcc ctggagattc gtttttctac tttgatgttc tgcagtctat tacagacata 960
atacaaatca atggcatccc cactgtggtc ggggtgttta ccacgcagct caatagcatc 1020
cctggttctg ctgtctgtgc atttagcatg gatgacattg aaaaagtatt caaaggacgg 1080
tttaaggaac agaaaactcc agattctgtt tggacagcag ttcccgaaga caaagtgcca 1140
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gatttcccgg atgaaactct gtcattcatc aaatctcatc ccctgatgga ctctgccgtt 1260
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gaggtatctt catcttctgt taccacaatg gcaagtatcc cagaaatcac acctaaagtg 1920
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agtggaagtt ttgccaaact gaatggtctc tttgacagcc ctgtcaagga ataccaacag 2280
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agcggccgct gaattctag                                              2359
```

<210> 18
<211> 768
<212> PRT
<213> Homo sapiens

<400> 18

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Met Arg Val Phe Leu Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser
  1               5                  10                  15

Gln Leu Arg Ala Val Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr
             20                  25                  30

Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
         35                  40                  45

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
     50                  55                  60

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
 65                  70                  75                  80

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
                 85                  90                  95
```

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
100 105 110

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
115 120 125

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
130 135 140

Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
145 150 155 160

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
165 170 175

Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
180 185 190

Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser
195 200 205

Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His
210 215 220

Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg
225 230 235 240

Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg
245 250 255

Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu
260 265 270

Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val
275 280 285

Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp
290 295 300

Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr
305 310 315 320

Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp
325 330 335

Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro
340 345 350

Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg
355 360 365

Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser
370 375 380

Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu
385 390 395 400

Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys
405 410 415

Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala
420 425 430

Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly
435 440 445

Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp
450 455 460

Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser
465 470 475 480

Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys
485 490 495

Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile
500 505 510

Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile
515 520 525

Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly
530 535 540

Arg Val Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe
545 550 555 560

His Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn
565 570 575

Thr Ala His Leu Gly Asp Cys His Glu Ile Leu Pro Thr Ser Thr Thr
580 585 590

Pro Asp Tyr Lys Ile Phe Gly Gly Pro Thr Ser Asp Met Glu Val Ser
595 600 605

Ser Ser Ser Val Thr Thr Met Ala Ser Ile Pro Glu Ile Thr Pro Lys
610 615 620

Val Ile Asp Thr Trp Arg Pro Lys Leu Thr Ser Ser Arg Lys Phe Val
625 630 635 640

Val Gln Asp Asp Pro Asn Thr Ser Asp Phe Thr Asp Pro Leu Ser Gly
645 650 655

Ile Pro Lys Gly Val Arg Trp Glu Val Gln Ser Gly Glu Ser Asn Gln
660 665 670

Met Val His Met Asn Val Leu Ile Thr Cys Val Phe Ala Ala Phe Val
675 680 685

Leu Gly Ala Phe Ile Ala Gly Val Ala Val Tyr Cys Tyr Arg Asp Met
690 695 700

```
Phe Val Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln
705                 710                 715                 720

Ser Cys Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe
                725                 730                 735

Asp Ser Pro Val Lys Glu Tyr Gln Gln Asn Ile Asp Ser Pro Lys Leu
            740                 745                 750

Tyr Ser Asn Leu Leu Thr Ser Arg Lys Glu His Glu Phe Ser Gly Arg
        755                 760                 765
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<210> 19
<211> 3364
<212> DNA
<213> Homo sapiens

<400> 19
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gatgatgaac cccttaatac tgtcgactat cactgtaagt cgtctaggca atatccggtt 180
tttagaggac gcccttcagg caatgaatcg cagcacaggc tggactttca gctgatgttg 240
aaaattcgag acacacttta tattgctggc agggatcaag tttatacagt aaacttaaat 300
gaaatgccca aaacagaagt aatatggcaa cagaaactga catggcgatc aagacaacag 360
gatcgagaaa actgtgctat gaaaggcaag cataaagatg aatgccacaa ctttatcaaa 420
gtatttgttc caagaaacga tgagatggtt tttgtttgtg gtaccaatgc attcaatccc 480
atgtgtagat actacagggt aagtaccttа gaatatgatg gggaagaaat tagtggcctg 540
gcaagatgcc catttgatgc cagacaaacc aatgttgccc tctttgctga tgggaagctg 600
tattctgcca cagtggctga cttcttggcc agcgatgccg ttatttatcg aagcatgggt 660
gatggatctg cccttcgcac aataaaatat gattccaaat ggataaaaga gccacacttt 720
cttcatgcca tagaatatgg aaactatgtc tatttcttct ttcgagaaat cgctgtcgaa 780
cataataatt taggcaaggc tgtgtattcc cgcgtggccc gcatatgtaa aaacgacatg 840
ggtggttccc agcgggtcct ggagaaacac tggacttcat ttctaaaggc tcggctgaac 900
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cctggttctg ctgtctgtgc atttagcatg gatgacattg aaaaagtatt caaaggacgg 1080
tttaaggaac agaaaactcc agattctgtt tggacagcag ttcccgaaga caaagtgcca 1140
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gaagctggca tggtacttaa agttctggca aagaccagtc ctttctcttt gaacgacagc 1440
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gacgtgccac caaagccttc ctttgttcct caaaccccat ctgtcagacc actgaacaaa 3300
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agag 3364

<210> 20
<211> 1088
<212> PRT
<213> Homo sapiens

<400> 20
Met Arg Val Phe Leu Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser
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Gln Leu Arg Ala Val Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr
20 25 30

Val Asp Tyr His Cys Lys Ser Ser Arg Gln Tyr Pro Val Phe Arg Gly
35 40 45

Arg Pro Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met
50 55 60

Leu Lys Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr
65 70 75 80

Thr Val Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Trp Gln Gln
85 90 95

Lys Leu Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met
100 105 110

Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val
115 120 125

Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn
130 135 140

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Pro Met Cys Arg Tyr Tyr Arg Val Ser Thr Leu Glu Tyr Asp Gly Glu
145                 150                 155                 160

Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn
                165                 170                 175

Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp
            180                 185                 190

Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser
        195                 200                 205

Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His
    210                 215                 220

Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg
225                 230                 235                 240

Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg
                245                 250                 255

Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu
            260                 265                 270

Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val
        275                 280                 285

Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp
    290                 295                 300

Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr
305                 310                 315                 320

Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp
                325                 330                 335

Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro
            340                 345                 350

Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg
        355                 360                 365

Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser
    370                 375                 380

Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu
385                 390                 395                 400

Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys
                405                 410                 415

Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala
            420                 425                 430

Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly
        435                 440                 445
```

Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp
450 455 460

Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser
465 470 475 480

Ala Glu Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys
485 490 495

Asp His His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile
500 505 510

Pro Leu Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile
515 520 525

Ala Ser Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly
530 535 540

Arg Val Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe
545 550 555 560

His Asn His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn
565 570 575

Thr Ala His Leu Gly Asp Cys His Glu Ile Leu Pro Thr Ser Thr Thr
580 585 590

Pro Asp Tyr Lys Ile Phe Gly Gly Pro Thr Ser Asp Met Glu Val Ser
595 600 605

Ser Ser Ser Val Thr Thr Met Ala Ser Ile Pro Glu Ile Thr Pro Lys
610 615 620

Val Ile Asp Thr Trp Arg Pro Lys Leu Thr Ser Ser Arg Lys Phe Val
625 630 635 640

Val Gln Asp Asp Pro Asn Thr Ser Asp Phe Thr Asp Pro Leu Ser Gly
645 650 655

Ile Pro Lys Gly Val Arg Trp Glu Val Gln Ser Gly Glu Ser Asn Gln
660 665 670

Met Val His Met Asn Val Leu Ile Thr Cys Val Phe Ala Ala Phe Val
675 680 685

Leu Gly Ala Phe Ile Ala Gly Val Ala Val Tyr Cys Tyr Arg Asp Met
690 695 700

Phe Val Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln
705 710 715 720

Ser Cys Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe
725 730 735

Asp Ser Pro Val Lys Glu Tyr Gln Gln Asn Ile Asp Ser Pro Lys Leu
740 745 750

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Tyr Ser Asn Leu Leu Thr Ser Arg Lys Glu Leu Pro Pro Asn Gly Asp
        755                 760                 765

Thr Lys Ser Met Val Met Asp His Arg Gly Gln Pro Pro Glu Leu Ala
    770                 775                 780

Ala Leu Pro Thr Pro Glu Ser Thr Pro Val Leu His Gln Lys Thr Leu
785                 790                 795                 800

Gln Ala Met Lys Ser His Ser Glu Lys Ala His Gly His Gly Ala Ser
                805                 810                 815

Arg Lys Glu Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser
            820                 825                 830

Pro Leu Ser His Gly His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala
        835                 840                 845

Thr His Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala
    850                 855                 860

Glu Lys Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys Ser Ser Ser
865                 870                 875                 880

Lys Arg Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr Leu Asn Asp
                885                 890                 895

Leu Leu Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys Ala Ile Met
            900                 905                 910

Gly Asp Ile Gln Met Ala His Gln Asn Leu Met Leu Asp Pro Met Gly
        915                 920                 925

Ser Met Ser Glu Val Pro Pro Lys Val Pro Asn Arg Glu Ala Ser Leu
    930                 935                 940

Tyr Ser Pro Pro Ser Thr Leu Pro Arg Asn Ser Pro Thr Lys Arg Val
945                 950                 955                 960

Asp Val Pro Thr Thr Pro Gly Val Pro Met Thr Ser Leu Glu Arg Gln
                965                 970                 975

Arg Gly Tyr His Lys Asn Ser Ser Gln Arg His Ser Ile Ser Ala Met
            980                 985                 990

Pro Lys Asn Leu Asn Ser Pro Asn Gly Val Leu Leu Ser Arg Gln Pro
        995                1000                1005

Ser Met Asn Arg Gly Gly Tyr Met Pro Thr Pro Thr Gly Ala Lys Val
   1010                1015                1020

Asp Tyr Ile Gln Gly Thr Pro Val Ser Val His Leu Gln Pro Ser Leu
1025                1030                1035                1040

Ser Arg Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly
                1045                1050                1055
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Leu Lys Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser
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Phe Val Pro Gln Thr Pro Ser Val Arg Pro Leu Asn Lys Tyr Thr Tyr
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<211> 2388
<212> DNA
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

<400> 22
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Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser
35 40 45

Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr
50 55 60

Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu
65 70 75 80

Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn
85 90 95

Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly
100 105 110

Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu
115 120 125

Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Pro Pro
130 135 140

Thr Leu Ser Ala Leu Pro Leu Cys His Leu Pro Leu Pro Leu His Leu
145 150 155 160

Thr Leu Thr Pro Leu Gly Leu Cys Pro Ala Gly Glu Val Phe Asp Tyr
165 170 175

Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe
180 185 190

Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile Val
195 200 205

His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala Asn
210 215 220

Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly Ser
225 230 235 240

Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu
245 250 255

Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser Leu
260 265 270

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Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly
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His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr Arg
    290                 295                 300

Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg Phe
305                 310                 315                 320

Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met Lys
                325                 330                 335

Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro Tyr
            340                 345                 350

Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val Met
        355                 360                 365

Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr Ser
    370                 375                 380

Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg Lys
385                 390                 395                 400

Leu Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu Glu Arg Leu
                405                 410                 415

Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly Ser Arg Gly
            420                 425                 430

Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn Pro Asn Lys
        435                 440                 445

Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Pro Val Ser Asp Gln
    450                 455                 460

Gly Trp Gly Met Met Thr Arg Arg Asn Thr Tyr Val Cys Thr Glu Arg
465                 470                 475                 480

Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly Lys Glu Asn Arg
                485                 490                 495

Val Pro Pro Ala Ser Pro Ser Ser His Ser Leu Ala Pro Pro Ser Gly
            500                 505                 510

Glu Arg Ser Arg Leu Ala Arg Gly Ser Thr Ile Arg Ser Thr Phe His
        515                 520                 525

Gly Gly Gln Val Arg Asp Arg Arg Ala Gly Gly Gly Gly Gly Gly Gly
    530                 535                 540

Val Gln Asn Gly Pro Pro Ala Ser Pro Thr Leu Ala His Glu Ala Ala
545                 550                 555                 560

Pro Leu Pro Ala Gly Arg Pro Arg Pro Thr Thr Asn Leu Phe Thr Lys
                565                 570                 575
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Leu Thr Ser Lys Leu Thr Arg Ser Arg Leu Ser Cys His Leu Pro Trp
            580                 585                 590

Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg Phe Pro Trp Ser Val
        595                 600                 605

Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu Met Ala Ala Leu Arg
    610                 615                 620

Gln Ala Thr Ala Ala Ala Arg Cys Arg Cys Arg Gln Pro Gln Pro Phe
625                 630                 635                 640

Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly Pro Glu Pro Leu Ser
                645                 650                 655

His Phe Glu Val Glu Val Cys Gln Leu Pro Arg Pro Gly Leu Arg Gly
            660                 665                 670

Val Leu Phe Arg Arg Val Ala Gly Thr Ala Leu Ala Phe Arg Thr Leu
        675                 680                 685

Val Thr Arg Ile Ser Asn Asp Leu Glu Leu
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<210> 23
<211> 1549
<212> DNA
<213> Homo sapiens

<400> 23

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<210> 24
<211> 508
<212> PRT
<213> Homo sapiens

<400> 24

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Thr His Gly Thr Leu Gly Ser Gly Arg Ser Ser Asp Lys Gly Pro Ser
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Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser
         35                  40                  45

Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr
     50                  55                  60

Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu
 65                  70                  75                  80

Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn
                 85                  90                  95

Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly
            100                 105                 110

Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu
        115                 120                 125

Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe
    130                 135                 140

Asp Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala
145                 150                 155                 160

Lys Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn
                165                 170                 175

Ile Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu
            180                 185                 190

Ala Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu
        195                 200                 205

Gly Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro
    210                 215                 220

Glu Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp
225                 230                 235                 240

Ser Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe
                245                 250                 255
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Asp Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys
            260                 265                 270

Tyr Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg
        275                 280                 285

Arg Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile
    290                 295                 300

Met Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys
305                 310                 315                 320

Pro Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu
                325                 330                 335

Val Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu
            340                 345                 350

Thr Ser Gln Lys Tyr Asn Glu Val Thr Ala Gly Arg Pro Arg Pro Thr
        355                 360                 365

Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg Arg Val Ala
    370                 375                 380

Asp Glu Pro Glu Arg Ile Gly Gly Pro Glu Val Thr Ser Cys His Leu
385                 390                 395                 400

Pro Trp Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg Phe Pro Trp
                405                 410                 415

Ser Val Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu Met Ala Ala
            420                 425                 430

Leu Arg Gln Ala Thr Ala Ala Ala Arg Cys Arg Cys Arg Gln Pro Gln
        435                 440                 445

Pro Phe Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly Pro Glu Pro
    450                 455                 460

Leu Ser His Phe Glu Val Glu Val Cys Gln Leu Pro Arg Pro Gly Leu
465                 470                 475                 480

Arg Gly Val Leu Phe Arg Arg Val Ala Gly Thr Ala Leu Ala Phe Arg
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Thr Leu Val Thr Arg Ile Ser Asn Asp Leu Glu Leu
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<210> 25
<211> 4818
<212> DNA
<213> Homo sapiens

<400> 25
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<211> 1469
<212> PRT
<213> Homo sapiens

<400> 26
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Pro Pro Ala Trp Thr Ala Ala Leu Pro Ala Gly Arg Pro Arg Gly Asp
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Pro Gly Phe Arg Ala Phe Leu Cys Pro Leu Ile Cys His Asn Gly Gly
35 40 45

Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
50 55 60

Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
65 70 75 80

Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
85 90 95

Arg Asp Asp Glu His Gly Val Ala Ser Met Val Ser Val His Val Glu
100 105 110

His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser
115 120 125

Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
130 135 140

```
Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser
145                 150                 155                 160

Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys
                165                 170                 175

Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu
            180                 185                 190

Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val
        195                 200                 205

His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val
    210                 215                 220

Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly
225                 230                 235                 240

Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His
                245                 250                 255

Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp
            260                 265                 270

Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val
        275                 280                 285

Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly
    290                 295                 300

Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys
305                 310                 315                 320

Ser Arg Val Gly Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro
                325                 330                 335

Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr
            340                 345                 350

His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln
        355                 360                 365

Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr
    370                 375                 380

Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg
385                 390                 395                 400

Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro
                405                 410                 415

Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser
            420                 425                 430

Ser Gly Met Cys Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys
        435                 440                 445
```

Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg
450 455 460

Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg
465 470 475 480

Val Pro Pro Pro Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser
485 490 495

Phe Arg Cys Val Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala
500 505 510

Glu Cys Leu Asp Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp
515 520 525

Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro
530 535 540

Ala Gly Tyr Gln Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp
545 550 555 560

Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly Arg Gly Ala Cys Lys Asn
565 570 575

Leu Pro Gly Ser Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser
580 585 590

Ala Cys Glu Glu Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys
595 600 605

Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys
610 615 620

Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val
625 630 635 640

Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu
645 650 655

Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro
660 665 670

Asn Ala Ala Gly Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His
675 680 685

Leu Ala Cys Pro Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln
690 695 700

Cys Arg Ala Cys Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr
705 710 715 720

Asp Val Asp Glu Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly
725 730 735

His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly
740 745 750

```
Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu
        755                 760                 765

Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr
    770                 775                 780

Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro
785                 790                 795                 800

Arg Gly Ala Ser Cys Leu Asp Val Asp Glu Cys Ser Glu Glu Asp Leu
                805                 810                 815

Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp Gly Ser Phe Glu Arg Ile
            820                 825                 830

Cys Pro Pro Gly His Arg Ala Gly Pro Asp Leu Ala Ser Cys Leu Asp
        835                 840                 845

Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg
    850                 855                 860

Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro
865                 870                 875                 880

Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys
                885                 890                 895

Gln Glu Tyr Gly Pro Glu Ile Cys Gly Ala Gln Arg Cys Glu Asn Thr
            900                 905                 910

Pro Gly Ser Tyr Arg Cys Thr Pro Ala Cys Asp Pro Gly Tyr Gln Pro
        915                 920                 925

Thr Pro Gly Gly Gly Cys Gln Asp Val Asn Glu Cys Glu Thr Leu Gln
    930                 935                 940

Gly Val Cys Gly Ala Ala Leu Cys Glu Asn Val Glu Gly Ser Phe Leu
945                 950                 955                 960

Cys Val Cys Pro Asn Ser Pro Glu Glu Phe Asp Pro Met Thr Gly Arg
                965                 970                 975

Cys Val Pro Pro Arg Thr Ser Ala Gly Thr Phe Pro Gly Ser Gln Pro
            980                 985                 990

Gln Ala Pro Ala Ser Pro Val Leu Pro Ala Arg Pro Pro Pro Pro Pro
        995                1000                1005

Leu Pro Arg Arg Pro Ser Thr Pro Arg Gln Gly Pro Val Gly Ser Gly
   1010                1015                1020

Arg Arg Glu Cys Tyr Phe Asp Thr Ala Ala Pro Asp Ala Cys Asp Asn
1025                1030                1035                1040

Ile Leu Ala Arg Asn Val Thr Trp Gln Glu Cys Cys Cys Thr Val Gly
                1045                1050                1055
```

```
Glu Gly Trp Gly Ser Gly Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu
          1060                1065                1070

Thr Ala Glu Tyr Gln Ser Leu Cys Pro His Gly Arg Gly Tyr Leu Ala
       1075                1080                1085

Pro Ser Gly Asp Leu Ser Leu Arg Arg Asp Val Asp Glu Cys Gln Leu
   1090                1095                1100

Phe Arg Asp Gln Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro
1105                1110                1115                1120

Gly Tyr Ser Cys Tyr Cys Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg
               1125                1130                1135

Leu Glu Cys Ile Asp Asn Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys
          1140                1145                1150

Glu Gly Gly Arg Cys Val Asn Thr Val Gly Ser Tyr His Cys Thr Cys
       1155                1160                1165

Glu Pro Pro Leu Val Leu Asp Gly Ser Gln Arg Arg Cys Val Ser Asn
   1170                1175                1180

Glu Ser Gln Ser Leu Asp Asp Asn Leu Gly Val Cys Trp Gln Glu Val
1185                1190                1195                1200

Gly Ala Asp Leu Val Cys Ser His Pro Arg Leu Asp Cys Gln Ala Thr
               1205                1210                1215

Tyr Thr Glu Cys Cys Cys Leu Tyr Gly Glu Ala Trp Gly Met Asp Cys
          1220                1225                1230

Ala Leu Cys Pro Ala Gln Asp Ser Asp Asp Phe Glu Ala Leu Cys Asn
       1235                1240                1245

Val Leu Arg Pro Pro Ala Tyr Ser Pro Pro Arg Pro Gly Gly Phe Gly
   1250                1255                1260

Leu Pro Tyr Glu Tyr Gly Pro Asp Leu Gly Pro Pro Tyr Gln Gly Leu
1265                1270                1275                1280

Pro Tyr Gly Pro Glu Leu Tyr Pro Pro Pro Ala Leu Pro Tyr Asp Pro
               1285                1290                1295

Tyr Pro Pro Pro Pro Gly Pro Phe Ala Arg Arg Glu Ala Pro Tyr Gly
          1300                1305                1310

Ala Pro Arg Phe Asp Met Pro Asp Phe Glu Asp Asp Gly Gly Pro Tyr
       1315                1320                1325

Gly Glu Ser Glu Ala Pro Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro
   1330                1335                1340

Tyr Arg Ser Arg Asp Thr Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro
1345                1350                1355                1360
```

```
Pro Glu Gly Gly Ser Tyr Ala Gly Ser Leu Ala Glu Pro Tyr Glu Glu
                1365                1370                1375

Leu Glu Ala Glu Glu Cys Gly Ile Leu Asp Gly Cys Thr Asn Gly Arg
            1380                1385                1390

Cys Val Arg Val Pro Glu Gly Phe Thr Cys Arg Cys Phe Asp Gly Tyr
        1395                1400                1405

Arg Leu Asp Met Thr Arg Met Ala Cys Val Asp Ile Asn Glu Cys Asp
    1410                1415                1420

Glu Ala Glu Ala Ala Ser Pro Leu Cys Val Asn Ala Arg Cys Leu Asn
1425                1430                1435                1440

Thr Asp Gly Ser Phe Arg Cys Ile Cys Arg Pro Gly Phe Ala Pro Thr
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His Gln Pro His His Cys Ala Pro Ala Arg Pro Arg Ala
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<210> 27
<211> 4812
<212> DNA
<213> Homo sapiens

<400> 27

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<210> 28
<211> 1467
<212> PRT

<213> Homo sapiens

<400> 28

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Pro Pro Ala Trp Thr Ala Ala Leu Pro Ala Gly Arg Pro Arg Gly Asp
             20                  25                  30

Pro Gly Phe Arg Ala Phe Leu Cys Pro Leu Ile Cys His Asn Gly Gly
         35                  40                  45

Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
     50                  55                  60

Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
 65                  70                  75                  80

Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
                 85                  90                  95

Arg Asp Asp Glu His Gly Val Ala Ser Met Val Ser Val His Val Glu
            100                 105                 110

His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser
        115                 120                 125

Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
    130                 135                 140

Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser
145                 150                 155                 160

Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys
                165                 170                 175

Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu
            180                 185                 190

Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val
        195                 200                 205

His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val
    210                 215                 220

Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly
225                 230                 235                 240

Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His
                245                 250                 255

Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp
            260                 265                 270

Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val
        275                 280                 285
```

```
Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly
    290                 295                 300

Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys
305                 310                 315                 320

Ser Arg Val Gly Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro
                325                 330                 335

Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr
            340                 345                 350

His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln
        355                 360                 365

Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr
    370                 375                 380

Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg
385                 390                 395                 400

Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro
                405                 410                 415

Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser
            420                 425                 430

Ser Gly Met Cys Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys
        435                 440                 445

Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg
    450                 455                 460

Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg
465                 470                 475                 480

Val Pro Pro Pro Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser
                485                 490                 495

Phe Arg Cys Val Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala
            500                 505                 510

Glu Cys Leu Asp Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp
        515                 520                 525

Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro
    530                 535                 540

Ala Gly Tyr Gln Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp
545                 550                 555                 560

Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly Arg Gly Ala Cys Lys Asn
                565                 570                 575

Leu Pro Gly Ser Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser
            580                 585                 590
```

```
Ala Cys Glu Glu Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys
        595                 600                 605

Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys
    610                 615                 620

Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val
625                 630                 635                 640

Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu
                645                 650                 655

Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro
            660                 665                 670

Asn Ala Ala Gly Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His
        675                 680                 685

Leu Ala Cys Pro Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln
    690                 695                 700

Cys Arg Ala Cys Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr
705                 710                 715                 720

Asp Val Asp Glu Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly
                725                 730                 735

His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly
            740                 745                 750

Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu
        755                 760                 765

Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr
    770                 775                 780

Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro
785                 790                 795                 800

Arg Gly Ala Ser Cys Leu Asp Val Asp Glu Cys Ser Glu Glu Asp Leu
                805                 810                 815

Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp Gly Ser Phe Glu Cys Ile
            820                 825                 830

Cys Pro Pro Gly His Arg Ala Gly Pro Asp Leu Ala Ser Cys Leu Asp
        835                 840                 845

Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg
    850                 855                 860

Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro
865                 870                 875                 880

Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys
                885                 890                 895
```

```
Arg Asn Arg Ser Phe Cys Gly Ala His Ala Val Cys Gln Asn Leu Pro
            900                 905                 910

Gly Ser Phe Gln Cys Leu Cys Asp Gln Gly Tyr Glu Gly Ala Arg Asp
        915                 920                 925

Gly Arg His Cys Val Asp Val Asn Glu Cys Glu Thr Leu Gln Gly Val
    930                 935                 940

Cys Gly Ala Ala Leu Cys Glu Asn Val Glu Gly Ser Phe Leu Cys Val
945                 950                 955                 960

Cys Pro Asn Ser Pro Glu Glu Phe Asp Pro Met Thr Gly Arg Cys Val
                965                 970                 975

Pro Pro Arg Thr Ser Ala Gly Thr Phe Pro Gly Ser Gln Pro Gln Ala
            980                 985                 990

Pro Ala Ser Pro Val Leu Pro Ala Arg Pro Pro Pro Pro Pro Leu Pro
        995                1000                1005

Arg Arg Pro Ser Thr Pro Arg Gln Gly Pro Val Gly Ser Gly Arg Arg
   1010                1015                1020

Glu Cys Tyr Phe Asp Thr Ala Ala Pro Asp Ala Cys Asp Asn Ile Leu
1025                1030                1035                1040

Ala Arg Asn Val Thr Trp Gln Glu Cys Cys Cys Thr Val Gly Glu Gly
                1045                1050                1055

Trp Gly Ser Gly Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu Thr Ala
            1060                1065                1070

Glu Tyr Gln Ser Leu Cys Pro His Gly Arg Gly Tyr Leu Ala Pro Ser
        1075                1080                1085

Gly Asp Leu Ser Leu Arg Arg Asp Val Asp Glu Cys Gln Leu Phe Arg
   1090                1095                1100

Asp Gln Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr
1105                1110                1115                1120

Ser Cys Tyr Cys Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu
                1125                1130                1135

Cys Ile Asp Asn Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly
            1140                1145                1150

Gly Arg Cys Val Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro
        1155                1160                1165

Pro Leu Val Leu Asp Gly Ser Gln Arg Arg Cys Val Ser Asn Glu Ser
   1170                1175                1180

Gln Ser Leu Asp Asp Asn Leu Gly Val Cys Trp Gln Glu Val Gly Ala
1185                1190                1195                1200
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Asp Leu Val Cys Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr
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Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
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Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
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Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
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Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu
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Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val
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Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp
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Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu
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cccaggattt gcacccacgc accagccaca ccactgtgcg cccgcacgac cccgggcctg 4200
agccctggca cccgatggcc acccacccgc gcccgccact cggggcccct gccccgcatc 4260
ctgcagcccg cttagtctga tgacgaggaa gcccgccaga aagtccagaa gaaggaacga 4320
cggacgcaaa gcggcgccgc ctaccatgcc tccccccccc accaccaccc cccccaactg 4380
tggtcgtccc cgcccggccc accccgcccc catttctccc cccttctttc aataaaaatt 4440
tcaatcataa aaaaccacct ataaaaaaaa aaa                                4473
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<210> 32
<211> 1354
<212> PRT
<213> Homo sapiens

<400> 32

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Met Gly Arg Pro Ala Pro Ala Val Pro Arg Pro Ala Arg Pro Ala Thr
  1               5                  10                  15

Pro Pro Ala Trp Thr Ala Ala Leu Pro Ala Gly Arg Pro Arg Gly Asp
             20                  25                  30

Pro Gly Phe Arg Ala Phe Leu Cys Pro Leu Ile Cys His Asn Gly Gly
         35                  40                  45

Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
     50                  55                  60

Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
 65                  70                  75                  80

Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
                 85                  90                  95

Arg Asp Asp Glu His Gly Val Ala Ser Met Val Ser Val His Val Glu
            100                 105                 110

His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser
        115                 120                 125

Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
    130                 135                 140
```

```
Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser
145                 150                 155                 160

Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys
                165                 170                 175

Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu
            180                 185                 190

Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val
        195                 200                 205

His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val
    210                 215                 220

Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly
225                 230                 235                 240

Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His
                245                 250                 255

Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp
            260                 265                 270

Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val
        275                 280                 285

Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly
    290                 295                 300

Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys
305                 310                 315                 320

Ser Arg Val Gly Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro
                325                 330                 335

Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr
            340                 345                 350

His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln
        355                 360                 365

Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr
    370                 375                 380

Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg
385                 390                 395                 400

Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro
                405                 410                 415

Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser
            420                 425                 430

Ser Gly Met Cys Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys
        435                 440                 445
```

Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg
450 455 460

Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg
465 470 475 480

Val Pro Pro Pro Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser
485 490 495

Phe Arg Cys Val Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala
500 505 510

Glu Cys Leu Asp Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp
515 520 525

Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro
530 535 540

Ala Gly Tyr Gln Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp
545 550 555 560

Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly Arg Gly Ala Cys Lys Asn
565 570 575

Leu Pro Gly Ser Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser
580 585 590

Ala Cys Glu Glu Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys
595 600 605

Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys
610 615 620

Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val
625 630 635 640

Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu
645 650 655

Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro
660 665 670

Asn Ala Ala Gly Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His
675 680 685

Leu Ala Cys Pro Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln
690 695 700

Cys Arg Ala Cys Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr
705 710 715 720

Asp Val Asp Glu Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly
725 730 735

His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly
740 745 750

Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu
755 760 765

Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr
770 775 780

Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro
785 790 795 800

Arg Gly Ala Ser Cys Leu Asp Val Asp Glu Cys Ser Glu Glu Asp Leu
805 810 815

Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp Gly Ser Phe Glu Cys Ile
820 825 830

Cys Pro Pro Gly His Arg Ala Gly Pro Asp Leu Ala Ser Cys Leu Asp
835 840 845

Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg
850 855 860

Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro
865 870 875 880

Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys
885 890 895

Arg Asn Arg Ser Phe Cys Gly Ala His Ala Val Cys Gln Asn Leu Pro
900 905 910

Gly Ser Phe Gln Cys Leu Cys Asp Gln Gly Tyr Glu Gly Ala Arg Asp
915 920 925

Gly Arg His Cys Val Asp Val Asn Glu Cys Glu Thr Leu Gln Gly Val
930 935 940

Cys Gly Ala Ala Leu Cys Glu Asn Val Glu Gly Ser Phe Leu Cys Val
945 950 955 960

Cys Pro Asn Ser Pro Glu Glu Phe Asp Pro Met Thr Gly Arg Cys Val
965 970 975

Pro Pro Arg Thr Ser Ala Asp Val Asp Glu Cys Gln Leu Phe Arg Asp
980 985 990

Gln Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr Ser
995 1000 1005

Cys Tyr Cys Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu Cys
1010 1015 1020

Ile Asp Asn Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly Gly
1025 1030 1035 1040

Arg Cys Val Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro Pro
1045 1050 1055

Leu Val Leu Asp Gly Ser Gln Arg Arg Cys Val Ser Asn Glu Ser Gln
1060 1065 1070

Ser Leu Asp Asp Asn Leu Gly Val Cys Trp Gln Glu Val Gly Ala Asp
1075 1080 1085

Leu Val Cys Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr Glu
1090 1095 1100

Cys Cys Cys Leu Tyr Gly Glu Ala Trp Gly Met Asp Cys Ala Leu Cys
1105 1110 1115 1120

Pro Ala Gln Asp Ser Asp Asp Phe Glu Ala Leu Cys Asn Val Leu Arg
1125 1130 1135

Pro Pro Ala Tyr Ser Pro Pro Arg Pro Gly Gly Phe Gly Leu Pro Tyr
1140 1145 1150

Glu Tyr Gly Pro Asp Leu Gly Pro Pro Tyr Gln Gly Leu Pro Tyr Gly
1155 1160 1165

Pro Glu Leu Tyr Pro Pro Pro Ala Leu Pro Tyr Asp Pro Tyr Pro Pro
1170 1175 1180

Pro Pro Gly Pro Phe Ala Arg Arg Glu Ala Pro Tyr Gly Ala Pro Arg
1185 1190 1195 1200

Phe Asp Met Pro Asp Phe Glu Asp Asp Gly Gly Pro Tyr Gly Glu Ser
1205 1210 1215

Glu Ala Pro Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro Tyr Arg Ser
1220 1225 1230

Arg Asp Thr Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro Pro Glu Gly
1235 1240 1245

Gly Ser Tyr Ala Gly Ser Leu Ala Glu Pro Tyr Glu Glu Leu Glu Ala
1250 1255 1260

Glu Glu Cys Gly Ile Leu Asp Gly Cys Thr Asn Gly Arg Cys Val Arg
1265 1270 1275 1280

Val Pro Glu Gly Phe Thr Cys Arg Cys Phe Asp Gly Tyr Arg Leu Asp
1285 1290 1295

Met Thr Arg Met Ala Cys Val Asp Ile Asn Glu Cys Asp Glu Ala Glu
1300 1305 1310

Ala Ala Ser Pro Leu Cys Val Asn Ala Arg Cys Leu Asn Thr Asp Gly
1315 1320 1325

Ser Phe Arg Cys Ile Cys Arg Pro Gly Phe Ala Pro Thr His Gln Pro
1330 1335 1340

His His Cys Ala Pro Ala Arg Pro Arg Ala
1345 1350

<210> 33
<211> 973
<212> DNA
<213> Homo sapiens

<400> 33
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ggagcacagt gcacacggcc tacctggtgc tgagctccct ggccatgttc acctgcctgt 120
gcgggatggc aggcaacagc atggtgatct ggctgctagg ctttcgaatg cacaggaacc 180
ccttctgcat ctatatcctc aacctggcgg cagccgacct cctcttcctc ttcagcatgg 240
cttccacgct cagcctggaa acccagcccc tggtcaatac cactgacaag gtccacgagc 300
tgatgaagag actgatgtac tttgcctaca cagtgggcct gagcctgctg acggccatca 360
gcacccagcg ctgtctctct gtcctcttcc ctatctggtt caagtgtcac cggcccaggc 420
acctgtcagc ctgggtgtgt ggcctgctgt ggacgctctg tctcctgatg aacgggttga 480
cctcttcctt ctgcagcaag ttcttgaaat tcaatgaaga tcggtgcttc agggtggaca 540
tggtccaggc cgccctcatc atgggggtct taaccccagt gatgactctg tccagcctga 600
ccctctttgt ctgggtgcgg aggagctccc agcagtggcg gcggcagccc acacggctgt 660
tcgtggtggt cctggcctct gtcctggtgt tcctcatctg ttccctgcct ctgagcatct 720
actggtttgt gctctactgg ttgagcccgc cgcccgagat gcaggtcctg tgcttcagct 780
tgtcacgcct ctcctcgtcc gtaagcagca gcgccaaccc cgtcatctac ttcctggtgg 840
gcagccggag gagccacagg ctgcccacca ggtccctggg gactgtgctc caacaggcgc 900
ttcgcgagga gcccgagctg gaaggtgggg agacgcccac cgtgggcacc aatgagatgg 960
gggcttgaga gcc 973

<210> 34
<211> 321
<212> PRT
<213> Homo sapiens

<400> 34
Met Asn Gln Thr Leu Asn Ser Ser Gly Thr Val Glu Ser Ala Leu Asn
1 5 10 15

Tyr Ser Arg Gly Ser Thr Val His Thr Ala Tyr Leu Val Leu Ser Ser
20 25 30

Leu Ala Met Phe Thr Cys Leu Cys Gly Met Ala Gly Asn Ser Met Val
35 40 45

Ile Trp Leu Leu Gly Phe Arg Met His Arg Asn Pro Phe Cys Ile Tyr
50 55 60

Ile Leu Asn Leu Ala Ala Ala Asp Leu Leu Phe Leu Phe Ser Met Ala
65 70 75 80

Ser Thr Leu Ser Leu Glu Thr Gln Pro Leu Val Asn Thr Thr Asp Lys
85 90 95

Val His Glu Leu Met Lys Arg Leu Met Tyr Phe Ala Tyr Thr Val Gly
100 105 110

Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser Val Leu
115 120 125

Phe Pro Ile Trp Phe Lys Cys His Arg Pro Arg His Leu Ser Ala Trp

130 135 140

Val Cys Gly Leu Leu Trp Thr Leu Cys Leu Leu Met Asn Gly Leu Thr
145 150 155 160

Ser Ser Phe Cys Ser Lys Phe Leu Lys Phe Asn Glu Asp Arg Cys Phe
165 170 175

Arg Val Asp Met Val Gln Ala Ala Leu Ile Met Gly Val Leu Thr Pro
180 185 190

Val Met Thr Leu Ser Ser Leu Thr Leu Phe Val Trp Val Arg Arg Ser
195 200 205

Ser Gln Gln Trp Arg Arg Gln Pro Thr Arg Leu Phe Val Val Val Leu
210 215 220

Ala Ser Val Leu Val Phe Leu Ile Cys Ser Leu Pro Leu Ser Ile Tyr
225 230 235 240

Trp Phe Val Leu Tyr Trp Leu Ser Pro Pro Pro Glu Met Gln Val Leu
245 250 255

Cys Phe Ser Leu Ser Arg Leu Ser Ser Ser Val Ser Ser Ser Ala Asn
260 265 270

Pro Val Ile Tyr Phe Leu Val Gly Ser Arg Arg Ser His Arg Leu Pro
275 280 285

Thr Arg Ser Leu Gly Thr Val Leu Gln Gln Ala Leu Arg Glu Glu Pro
290 295 300

Glu Leu Glu Gly Gly Glu Thr Pro Thr Val Gly Thr Asn Glu Met Gly
305 310 315 320

Ala

<210> 35
<211> 671
<212> DNA
<213> Homo sapiens

<400> 35
atgcgaagtc actcttacct ctgatgataa taatggtgat aattttcttg gtgcttctgt 60
tctgggaaaa tgaggtgaat gatgaagcag tgatgtcaac tttagaacac ttgcatgtgg 120
actaccctca gaatgacgtt cccgttcctg caaggtactg caaccacatg atcatacaaa 180
gagttatcag ggaacctgac cacacttgta aaaaggagca tgtcttcatc catgagaggc 240
ctcgaaaaat caatggtatt tgcatttctc ccaagaaggt tgcttgccaa aacctttcgg 300
ccattttctg ctttcagagt gagacaaagt tcaaaatgac agtctgtcag ctcattgaag 360
gcacaagata ccctgcctgc aggtaccact attcccccac agaggggttt gttcttgtca 420
cttgtgatga cttgaggcca gatagtttcc ttggctatgt taaataactc aagatcagct 480
cccgagtctg agatctcttc tctcaatggc attggagctg gctgtgcctg aggcagacct 540
ggaccgtgga catggggcaa tgccttgaac ggaaggggaa gccactggta attaatttat 600
ccttcctgta ttgctgggtt gggattgttt tattctgctt caataaaata atctttactg 660
aattaaaaaa a 671

<210> 36
<211> 154
<212> PRT
<213> Homo sapiens

<400> 36
Ala Lys Ser Leu Leu Pro Leu Met Ile Ile Met Val Ile Ile Phe Leu
1 5 10 15

Val Leu Leu Phe Trp Glu Asn Glu Val Asn Asp Glu Ala Val Met Ser
20 25 30

Thr Leu Glu His Leu His Val Asp Tyr Pro Gln Asn Asp Val Pro Val
35 40 45

Pro Ala Arg Tyr Cys Asn His Met Ile Ile Gln Arg Val Ile Arg Glu
50 55 60

Pro Asp His Thr Cys Lys Lys Glu His Val Phe Ile His Glu Arg Pro
65 70 75 80

Arg Lys Ile Asn Gly Ile Cys Ile Ser Pro Lys Lys Val Ala Cys Gln
85 90 95

Asn Leu Ser Ala Ile Phe Cys Phe Gln Ser Glu Thr Lys Phe Lys Met
100 105 110

Thr Val Cys Gln Leu Ile Glu Gly Thr Arg Tyr Pro Ala Cys Arg Tyr
115 120 125

His Tyr Ser Pro Thr Glu Gly Phe Val Leu Val Thr Cys Asp Asp Leu
130 135 140

Arg Pro Asp Ser Phe Leu Gly Tyr Val Lys
145 150

<210> 37
<211> 1476
<212> DNA
<213> Homo sapiens

<400> 37
caggtgcaaa ccagccccag gctccatggc ttcaagaagg tcgaagttca agggaagcac 60
caaggctccc ttgtgggtct ggaaatctgc attggtaaat gctttaggct ttttttacttc 120
ttcatgcaaa gttttctttg catcggatcc catcaaaata gtgagagccc agaggcagta 180
catgtttgat gagaacggtg aacagtactt ggactgcatc aacaatgttg ccgtgggaca 240
ctgtcaccca ggagtggtca aagctgccct gaaacagatg gaactgctaa atacaaattc 300
tcgattcctc cacgacaaca ttgttgagta tgccaaacgc ctttcagcaa ctctgccgga 360
gaaactctct gtttgttatt ttacaaattc agggtccgaa gccaacgact tagccttacg 420
cctggctcgg cagttcagag gccaccagga tgtgatcact cttgacgctt accatggtca 480
cctatcatcc ttaattgaga ttagcccata taagtttcag aaaggaaaag atgtcaaaaa 540
agaatttgta catgtggcac caactccaga tacttacaga ggaaaatata gagaagacca 600
tgcagactca gccagtgctt atgcagatga agtgaagaaa atcattgaag atgctcataa 660
cagtggaagg aaggttgctg cctttattgc tgaatccatg cagagttgtg gcggacaaat 720

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aattcctcca gcaggctact tccagaaagt ggcagagtat gtacacggtg caggggtgt 780
gtttatagct gatgaagttc aagtgggctt tggcagagtt gggaaacatt tctggagctt 840
ccagatgtat ggtgaagact ttgttccaga catcgtcaca atgggaaaac cgatgggcaa 900
cggccacccg gtggcatgtg tggtaacaac caaagaaatt gcagaagcct tcagcagctc 960
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tgtcctggat ataattgaaa atgaagacct tcaaggaaat gccaagagag tagggaatta 1080
tctcactgag ttactgaaaa aacagaaggc taaacacact ttgataggag atattagggg 1140
cattggcctt tttattggaa ttgatttagt gaaggaccat ctgaaaagga cccctgatat 1200
gtatttagct ttggggacaa ttttggttct ggagaaagaa aaacgagtgc ttctcagtgc 1260
cgatggacct catagaaatg tacttaaaat aaaaccacct atgtgcttca ctgaagaaga 1320
tgcaaagttc atggtggacc aacttgatag gattctaaca ggtgggtcca tggatcttta 1380
agatgtcttc ttgttccctc tcccaaaccc acccctcaaa ccctggtcta gtcataatga 1440
gcatatgcat cttgttattc atgatggaag tgaggc                          1476
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<210> 38
<211> 451
<212> PRT
<213> Homo sapiens

<400> 38

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Met Ala Ser Arg Arg Ser Lys Phe Lys Gly Ser Thr Lys Ala Pro Leu
  1               5                  10                  15

Trp Val Trp Lys Ser Ala Leu Val Asn Ala Leu Gly Phe Phe Thr Ser
             20                  25                  30

Ser Cys Lys Val Phe Phe Ala Ser Asp Pro Ile Lys Ile Val Arg Ala
         35                  40                  45

Gln Arg Gln Tyr Met Phe Asp Glu Asn Gly Glu Gln Tyr Leu Asp Cys
     50                  55                  60

Ile Asn Asn Val Ala Val Gly His Cys His Pro Gly Val Val Lys Ala
 65                  70                  75                  80

Ala Leu Lys Gln Met Glu Leu Leu Asn Thr Asn Ser Arg Phe Leu His
                 85                  90                  95

Asp Asn Ile Val Glu Tyr Ala Lys Arg Leu Ser Ala Thr Leu Pro Glu
            100                 105                 110

Lys Leu Ser Val Cys Tyr Phe Thr Asn Ser Gly Ser Glu Ala Asn Asp
        115                 120                 125

Leu Ala Leu Arg Leu Ala Arg Gln Phe Arg Gly His Gln Asp Val Ile
    130                 135                 140

Thr Leu Asp Ala Tyr His Gly His Leu Ser Ser Leu Ile Glu Ile Ser
145                 150                 155                 160

Pro Tyr Lys Phe Gln Lys Gly Lys Asp Val Lys Lys Glu Phe Val His
                165                 170                 175

Val Ala Pro Thr Pro Asp Thr Tyr Arg Gly Lys Tyr Arg Glu Asp His
            180                 185                 190
```

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Ala Asp Ser Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu
        195                 200                 205

Asp Ala His Asn Ser Gly Arg Lys Val Ala Ala Phe Ile Ala Glu Ser
    210                 215                 220

Met Gln Ser Cys Gly Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Gln
225                 230                 235                 240

Lys Val Ala Glu Tyr Val His Gly Ala Gly Gly Val Phe Ile Ala Asp
                245                 250                 255

Glu Val Gln Val Gly Phe Gly Arg Val Gly Lys His Phe Trp Ser Phe
            260                 265                 270

Gln Met Tyr Gly Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys
        275                 280                 285

Pro Met Gly Asn Gly His Pro Val Ala Cys Val Val Thr Thr Lys Glu
    290                 295                 300

Ile Ala Glu Ala Phe Ser Ser Ser Gly Met Glu Tyr Phe Asn Thr Tyr
305                 310                 315                 320

Gly Gly Asn Pro Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Ile
                325                 330                 335

Ile Glu Asn Glu Asp Leu Gln Gly Asn Ala Lys Arg Val Gly Asn Tyr
            340                 345                 350

Leu Thr Glu Leu Leu Lys Lys Gln Lys Ala Lys His Thr Leu Ile Gly
        355                 360                 365

Asp Ile Arg Gly Ile Gly Leu Phe Ile Gly Ile Asp Leu Val Lys Asp
    370                 375                 380

His Leu Lys Arg Thr Pro Asp Met Tyr Leu Ala Leu Gly Thr Ile Leu
385                 390                 395                 400

Val Leu Glu Lys Glu Lys Arg Val Leu Leu Ser Ala Asp Gly Pro His
                405                 410                 415

Arg Asn Val Leu Lys Ile Lys Pro Pro Met Cys Phe Thr Glu Glu Asp
            420                 425                 430

Ala Lys Phe Met Val Asp Gln Leu Asp Arg Ile Leu Thr Gly Gly Ser
        435                 440                 445

Met Asp Leu
    450


<210> 39
<211> 3350
<212> DNA
<213> Homo sapiens
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<400> 39
cgcccattgg ctcctcagcc aagcacgtac accaaatgtc tgaacctgcg gttcctctcg 60
tactgagcag gattaccatg gcaacaacac atcatcagta gggtaaaact aacctgtctc 120
acgacggtct aaacccaggc agcctcggcc gccgggcaag tagctccgag cggctgcttc 180
ccggttgcct cgaagaagac agggggcgcc gcgctccgct tgctccgcgc ctgagccatg 240
cccagcagcc ctgtgtaacc accgagtccc ggccggagcc gaccgaccca gtgtgcgccg 300
tctttcggcc gagctgagct ttcgtgcacg caactccctc tgccccagcc ggccccgcgc 360
caccatgccc cgggcgactg cacttggggc cctggtgtca ctgctgctgc tgctgccgct 420
gcctcgcggc gccgggggac tcggggagcg cccggacgcc accgcagact actcagagct 480
ggacggcgag gagggcacgg agcagcagct ggagcattac cacgaccctt gcaaagccgc 540
tgtcttttgg ggagacattg ccttagatga agatgacttg aagctgtttc acattgacaa 600
agccagagac tggaccaagc agacagtggg ggcaacagga cacagcacag gtgggcttga 660
agagcaggca tctgagagca gcccagacac cacagccatg gacactggca ccaaggaagc 720
tggaaaggat ggccgggaga ataccacact cctgcacagc cctgggacct tgcatgccgc 780
agccaagacc ttctctcccc gggtccgaag agccacaacc tcaaggacag agaggatatg 840
gcctggagga gtcatcccct acgtcattgg agggaacttc actgggagcc agagggccat 900
ttttaagcag gccatgagac actgggagaa gcacacctgt gtgaccttca tagaaaggac 960
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gcgccgagga ggaggcccac aggccatatc cattgggaag aactgtgaca agtttggcat 1080
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aaaaatggaa gctggggaag tgagctctct gggagagaca tacgactttg acagcatcat 1260
gcactacgcc cggaacacct tctcaagagg agttttctta gacaccatcc ttccccgtca 1320
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gaggatctcg gtcaccccag gggaaaagat cgtattaaac ttcacatcca tggatttgtt 1560
taaaagccga ctgtgctggt atgattacgt ggaggtccgg gatggttact ggagaaaagc 1620
ccccctttg ggcaggtttt gtggcgataa gatcccggag cccctcgtct ccacggacag 1680
ccggctctgg gtggagttcc gcagcagcag caacatcttg ggcaagggct tctttgcagc 1740
gtacgaagct acctgcgggg gagacatgaa caaagatgcc ggtcagattc aatctcccaa 1800
ctatccggat gactacagac cttccaagga atgtgtctgg aggattacgg tttcagaggg 1860
gtttcacgtg ggacttacct tccaagcttt tgagattgaa aggcacgaca gctgtgcata 1920
tgactacctg gaagtccggg atggccccac ggaagagagt gccctgatcg gccacttttg 1980
tggctatgag aagccggagg atgtgaaatc gagctccaac agactgtgga tgaagtttgt 2040
gtccgatggc tctatcaata aagcgggctt tgcagccaat tttttcaagg aggtggatga 2100
gtgttcctgg ccagatcacg gcgggtgcga acatcgctgt gtgaacacgc tgggcagcta 2160
caagtgtgcc tgtgaccctg gctacgagct ggccgccgat aagaagatgt gtgaagtggc 2220
ctgtggcggt ttcattacca agctgaatgg aaccatcacc agccctgggt ggccgaagga 2280
gtatcccaca aacaaaaact gtgtctggca ggtggtggcc cccactcagt accggatctc 2340
ccttcagttt gaagtgtttg aactggaagg caatgacgtc tgtaagtacg actttgtaga 2400
ggtgcgcagc ggcctgtccc ccgacgccaa gctgcacggc aggttctgcg gctctgagac 2460
gccggaagtc atcacctcgc agagcaacaa catgcgcgtg gagttcaagt ccgacaacac 2520
cgtctccaag cgcggcttca gggcccactt cttctcagat aaggacgagt gtgccaagga 2580
caacggcggg tgtcagcatg agtgcgtcaa caccttcggg agctacctgt gcaggtgcag 2640
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<210> 40
<211> 992
<212> PRT
<213> Homo sapiens

<400> 40
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Leu Pro Leu Pro Arg Gly Ala Gly Gly Leu Gly Glu Arg Pro Asp Ala
20 25 30

Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln
35 40 45

Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp
50 55 60

Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala
65 70 75 80

Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly
85 90 95

Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met
100 105 110

Asp Thr Gly Thr Lys Glu Ala Gly Lys Asp Gly Arg Glu Asn Thr Thr
115 120 125

Leu Leu His Ser Pro Gly Thr Leu His Ala Ala Ala Lys Thr Phe Ser
130 135 140

Pro Arg Val Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro
145 150 155 160

Gly Gly Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln
165 170 175

Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys
180 185 190

Val Thr Phe Ile Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser
195 200 205

Tyr Arg Thr Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly
210 215 220

Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val
225 230 235 240

Ala His Glu Leu Gly His Val Val Gly Phe Trp His Glu His Thr Arg
245 250 255

Pro Asp Arg Asp Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro

260 265 270

Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser
275 280 285

Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn
290 295 300

Thr Phe Ser Arg Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Gln Asp
305 310 315 320

Asp Asn Gly Val Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln
325 330 335

Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro Ala Cys Gly
340 345 350

Glu Thr Leu Gln Asp Thr Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro
355 360 365

Asn Gly Tyr Pro Ser Tyr Ser His Cys Val Trp Arg Ile Ser Val Thr
370 375 380

Pro Gly Glu Lys Ile Val Leu Asn Phe Thr Ser Met Asp Leu Phe Lys
385 390 395 400

Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp Gly Tyr Trp
405 410 415

Arg Lys Ala Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu
420 425 430

Pro Leu Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe Arg Ser Ser
435 440 445

Ser Asn Ile Leu Gly Lys Gly Phe Phe Ala Ala Tyr Glu Ala Thr Cys
450 455 460

Gly Gly Asp Met Asn Lys Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr
465 470 475 480

Pro Asp Asp Tyr Arg Pro Ser Lys Glu Cys Val Trp Arg Ile Thr Val
485 490 495

Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu
500 505 510

Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg Asp Gly Pro
515 520 525

Thr Glu Glu Ser Ala Leu Ile Gly His Phe Cys Gly Tyr Glu Lys Pro
530 535 540

Glu Asp Val Lys Ser Ser Ser Asn Arg Leu Trp Met Lys Phe Val Ser
545 550 555 560

Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu

565 570 575

Val Asp Glu Cys Ser Trp Pro Asp His Gly Gly Cys Glu His Arg Cys
580 585 590

Val Asn Thr Leu Gly Ser Tyr Lys Cys Ala Cys Asp Pro Gly Tyr Glu
595 600 605

Leu Ala Ala Asp Lys Lys Met Cys Glu Val Ala Cys Gly Gly Phe Ile
610 615 620

Thr Lys Leu Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr
625 630 635 640

Pro Thr Asn Lys Asn Cys Val Trp Gln Val Val Ala Pro Thr Gln Tyr
645 650 655

Arg Ile Ser Leu Gln Phe Glu Val Phe Glu Leu Glu Gly Asn Asp Val
660 665 670

Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Ser Pro Asp Ala
675 680 685

Lys Leu His Gly Arg Phe Cys Gly Ser Glu Thr Pro Glu Val Ile Thr
690 695 700

Ser Gln Ser Asn Asn Met Arg Val Glu Phe Lys Ser Asp Asn Thr Val
705 710 715 720

Ser Lys Arg Gly Phe Arg Ala His Phe Phe Ser Asp Lys Asp Glu Cys
725 730 735

Ala Lys Asp Asn Gly Gly Cys Gln His Glu Cys Val Asn Thr Phe Gly
740 745 750

Ser Tyr Leu Cys Arg Cys Arg Asn Gly Tyr Trp Leu His Glu Asn Gly
755 760 765

His Asp Cys Lys Glu Ala Gly Cys Ala His Lys Ile Ser Ser Val Glu
770 775 780

Gly Thr Leu Ala Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Arg
785 790 795 800

Glu Cys Thr Trp Asn Ile Ser Ser Thr Ala Gly His Arg Val Lys Leu
805 810 815

Thr Phe Asn Glu Phe Glu Ile Glu Gln His Gln Glu Cys Ala Tyr Asp
820 825 830

His Leu Glu Met Tyr Asp Gly Pro Asp Ser Leu Ala Pro Ile Leu Gly
835 840 845

Arg Phe Cys Gly Ser Lys Lys Pro Asp Pro Thr Val Ala Ser Gly Ser
850 855 860

Lys Cys Gly Gly Arg Leu Lys Ala Glu Val Gln Thr Lys Glu Leu Tyr

865 870 875 880

Ser His Ala Gln Phe Gly Asp Asn Asn Tyr Pro Ser Glu Ala Arg Cys
885 890 895

Asp Trp Val Ile Val Ala Glu Asp Gly Tyr Gly Val Glu Leu Thr Phe
900 905 910

Arg Thr Phe Glu Val Glu Glu Glu Ala Asp Cys Gly Tyr Asp Tyr Met
915 920 925

Glu Ala Tyr Asp Gly Tyr Asp Ser Ser Ala Pro Arg Leu Gly Arg Phe
930 935 940

Cys Gly Ser Gly Pro Leu Glu Glu Ile Tyr Ser Ala Gly Asp Ser Leu
945 950 955 960

Met Ile Arg Phe Arg Thr Asp Asp Thr Ile Asn Lys Lys Gly Phe His
965 970 975

Ala Arg Tyr Thr Ser Thr Lys Phe Gln Asp Gly Leu His Met Lys Lys
980 985 990

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<211> 3146
<212> DNA
<213> Homo sapiens

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aaagatcgta ttaaacttca catccatgga tttgtttaaa agccgactgt gctggtatga 1380
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cctgcacatg aagaaatagt gctgat                                     3146
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<210> 42
<211> 970
<212> PRT
<213> Homo sapiens

<400> 42

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Leu Pro Leu Pro Arg Gly Ala Gly Gly Leu Gly Glu Arg Pro Asp Ala
            20                  25                  30

Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln
        35                  40                  45

Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp
    50                  55                  60

Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala
65                  70                  75                  80

Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly
                85                  90                  95

Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met
            100                 105                 110
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Asp Thr Gly Thr Lys Glu Ala Gly Lys Gly Ser Gln Arg Ala Ile Phe
115 120 125

Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys Val Thr Phe Ile
130 135 140

Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser Tyr Arg Thr Cys
145 150 155 160

Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly Pro Gln Ala Ile
165 170 175

Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val Ala His Glu Leu
180 185 190

Gly His Val Val Gly Phe Trp His Glu His Thr Arg Pro Asp Arg Asp
195 200 205

Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro Gly Gln Glu Tyr
210 215 220

Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser Leu Gly Glu Thr
225 230 235 240

Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn Thr Phe Ser Arg
245 250 255

Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Gln Asp Asp Asn Gly Val
260 265 270

Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln Gly Asp Ile Ala
275 280 285

Gln Ala Arg Lys Leu Tyr Lys Cys Pro Gly Pro Thr Cys Ala Phe Val
290 295 300

Ser Gln Lys Thr Ser Ile Cys Leu Leu His Phe Ser Pro Thr Cys Ser
305 310 315 320

Glu Gly Phe Gly Trp Gln Arg Ala Cys Gly Glu Thr Leu Gln Asp Thr
325 330 335

Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro Asn Gly Tyr Pro Ser Tyr
340 345 350

Ser His Cys Val Trp Arg Ile Ser Val Thr Pro Gly Glu Lys Ile Val
355 360 365

Leu Asn Phe Thr Ser Met Asp Leu Phe Lys Ser Arg Leu Cys Trp Tyr
370 375 380

Asp Tyr Val Glu Val Arg Asp Gly Tyr Trp Arg Lys Ala Pro Leu Leu
385 390 395 400

Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu Pro Leu Val Ser Thr Asp
405 410 415

Ser Arg Leu Trp Val Glu Phe Arg Ser Ser Ser Asn Ile Leu Gly Lys
420 425 430

Gly Phe Phe Ala Ala Tyr Glu Ala Thr Cys Gly Gly Asp Met Asn Lys
435 440 445

Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr Pro Asp Asp Tyr Arg Pro
450 455 460

Ser Lys Glu Cys Val Trp Arg Ile Thr Val Ser Glu Gly Phe His Val
465 470 475 480

Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu Arg His Asp Ser Cys Ala
485 490 495

Tyr Asp Tyr Leu Glu Val Arg Asp Gly Pro Thr Glu Glu Ser Ala Leu
500 505 510

Ile Gly His Phe Cys Gly Tyr Glu Lys Pro Glu Asp Val Lys Ser Ser
515 520 525

Ser Asn Arg Leu Trp Met Lys Phe Val Ser Asp Gly Ser Ile Asn Lys
530 535 540

Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu Val Asp Glu Cys Ser Trp
545 550 555 560

Pro Asp His Gly Gly Cys Glu His Arg Cys Val Asn Thr Leu Gly Ser
565 570 575

Tyr Lys Cys Ala Cys Asp Pro Gly Tyr Glu Leu Ala Ala Asp Lys Lys
580 585 590

Met Cys Glu Val Ala Cys Gly Gly Phe Ile Thr Lys Leu Asn Gly Thr
595 600 605

Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr Pro Thr Asn Lys Asn Cys
610 615 620

Val Trp Gln Val Val Ala Pro Thr Gln Tyr Arg Ile Ser Leu Gln Phe
625 630 635 640

Glu Val Phe Glu Leu Glu Gly Asn Asp Val Cys Lys Tyr Asp Phe Val
645 650 655

Glu Val Arg Ser Gly Leu Ser Pro Asp Ala Lys Leu His Gly Arg Phe
660 665 670

Cys Gly Ser Glu Thr Pro Glu Val Ile Thr Ser Gln Ser Asn Asn Met
675 680 685

Arg Val Glu Phe Lys Ser Asp Asn Thr Val Ser Lys Arg Gly Phe Arg
690 695 700

Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ala Lys Asp Asn Gly Gly
705 710 715 720

Cys Gln His Glu Cys Val Asn Thr Phe Gly Ser Tyr Leu Cys Arg Cys
725 730 735

Arg Asn Gly Tyr Trp Leu His Glu Asn Gly His Asp Cys Lys Glu Ala
740 745 750

Gly Cys Ala His Lys Ile Ser Ser Val Glu Gly Thr Leu Ala Ser Pro
755 760 765

Asn Trp Pro Asp Lys Tyr Pro Ser Arg Arg Glu Cys Thr Trp Asn Ile
770 775 780

Ser Ser Thr Ala Gly His Arg Val Lys Leu Thr Phe Asn Glu Phe Glu
785 790 795 800

Ile Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu Glu Met Tyr Asp
805 810 815

Gly Pro Asp Ser Leu Ala Pro Ile Leu Gly Arg Phe Cys Gly Ser Lys
820 825 830

Lys Pro Asp Pro Thr Val Ala Ser Gly Ser Lys Cys Gly Gly Arg Leu
835 840 845

Lys Ala Glu Val Gln Thr Lys Glu Leu Tyr Ser His Ala Gln Phe Gly
850 855 860

Asp Asn Asn Tyr Pro Ser Glu Ala Arg Cys Asp Trp Val Ile Val Ala
865 870 875 880

Glu Asp Gly Tyr Gly Val Glu Leu Thr Phe Arg Thr Phe Glu Val Glu
885 890 895

Glu Glu Ala Asp Cys Gly Tyr Asp Tyr Met Glu Ala Tyr Asp Gly Tyr
900 905 910

Asp Ser Ser Ala Pro Arg Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu
915 920 925

Glu Glu Ile Tyr Ser Ala Gly Asp Ser Leu Met Ile Arg Phe Arg Thr
930 935 940

Asp Asp Thr Ile Asn Lys Lys Gly Phe His Ala Arg Tyr Thr Ser Thr
945 950 955 960

Lys Phe Gln Asp Ala Leu His Met Lys Lys
965 970

<210> 43
<211> 1604
<212> DNA
<213> Homo sapiens

<400> 43
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gagaaggtat gtgaatggag gcctcctgaa caactgaaac agcttcttga tttggagatg 240
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tccttggtgg cccgatttat gaccgaagca ttgaatccaa gtagttatac gtatgaggtg 420
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aatttagcta gatacaaata ttgtcctgat attaaggaaa aggggctgtc tggttcgcca 600
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gaggaactgg agaagcaagt ctggcaagcc agaaaagagg gggcagcacc gtttcttgtc 780
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gacttcctcc tggatgagat agacttactg ggtaaagaca tgtagctgtg gctttggtcc 1560
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<210> 44
<211> 494
<212> PRT
<213> Homo sapiens

<400> 44

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Met Ile Pro Ser Lys Lys Gly Val Val Leu Asn Gly Asp Ala Lys Ala
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Gly Glu Lys Phe Val Glu Glu Ala Cys Arg Leu Ile Met Glu Glu Val
             20                  25                  30

Val Leu Lys Ala Thr Asp Val Asn Glu Lys Val Cys Glu Trp Arg Pro
         35                  40                  45

Pro Glu Gln Leu Lys Gln Leu Leu Asp Leu Glu Met Arg Asp Ser Gly
     50                  55                  60

Glu Pro Pro His Lys Leu Leu Glu Leu Cys Arg Asp Val Ile His Tyr
 65                  70                  75                  80

Ser Val Lys Thr Asp His Pro Arg Phe Phe Asn Gln Leu Tyr Ala Gly
                 85                  90                  95

Leu Asp Tyr Tyr Ser Leu Val Ala Arg Phe Met Thr Glu Ala Leu Asn
            100                 105                 110

Pro Ser Ser Tyr Thr Tyr Glu Val Ser Pro Val Phe Leu Leu Val Glu
        115                 120                 125
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Glu Ala Val Leu Lys Lys Met Ile Glu Phe Ile Gly Trp Lys Glu Gly
130 135 140

Asp Gly Ile Phe Asn Pro Gly Gly Ser Val Ser Asn Met Tyr Ala Met
145 150 155 160

Asn Leu Ala Arg Tyr Lys Tyr Cys Pro Asp Ile Lys Glu Lys Gly Leu
165 170 175

Ser Gly Ser Pro Arg Leu Ile Leu Phe Thr Ser Ala Glu Cys His Tyr
180 185 190

Ser Met Lys Lys Ala Ala Ser Phe Leu Gly Ile Gly Thr Glu Asn Val
195 200 205

Cys Phe Val Glu Thr Asp Arg Gly Lys Met Ile Pro Glu Glu Leu Glu
210 215 220

Lys Gln Val Trp Gln Ala Arg Lys Glu Gly Ala Ala Pro Phe Leu Val
225 230 235 240

Cys Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu Asp
245 250 255

Glu Ile Ala Asp Ile Cys Glu Arg His Ser Leu Trp Leu His Val Asp
260 265 270

Ala Ser Trp Gly Gly Ser Ala Leu Met Ser Arg Lys His Arg Lys Leu
275 280 285

Leu His Gly Ile His Arg Ala Asp Ser Val Ala Trp Asn Pro His Lys
290 295 300

Met Leu Met Ala Gly Ile Gln Cys Cys Ala Leu Leu Val Lys Asp Lys
305 310 315 320

Ser Asp Leu Glu Lys Arg Cys Gln Glu Phe Val Pro Ala Tyr Leu Trp
325 330 335

Gln Glu Asp Lys Phe Tyr Asn Val Ala Phe Gln Lys Asn Gly Thr Lys
340 345 350

Phe Thr His Glu Thr Gln Val Gly Arg Asn Cys Arg Ser Leu Trp Phe
355 360 365

Thr Trp Lys Ala Arg Gly Gly Glu Gly Leu Gly Trp Leu Arg Cys Pro
370 375 380

Met Leu Gly Asp Gly Arg Tyr Leu Val Asp Glu Ile Lys Lys Arg Glu
385 390 395 400

Gly Phe Lys Leu Leu Met Glu Pro Glu Tyr Ala Asn Ile Cys Phe Trp
405 410 415

Tyr Ile Pro Pro Ser Leu Arg Glu Met Glu Glu Gly Pro Glu Phe Trp
420 425 430

Ala Lys Leu Thr Gln Val Ala Pro Ala Ile Lys Glu Arg Met Met Lys
435 440 445

Lys Gly Ser Leu Met Leu Gly Tyr Gln Pro His Phe Thr Lys Val Asn
450 455 460

Phe Phe Arg Gln Val Val Ile Ser Pro Gln Val Ser Arg Glu Asp Met
465 470 475 480

Asp Phe Leu Leu Asp Glu Ile Asp Leu Leu Gly Lys Asp Met
485 490

<210> 45
<211> 3564
<212> PRT
<213> Mus musculus

<400> 45
Met Thr Ala Trp Arg Lys Phe Lys Ser Leu Leu Leu Pro Leu Val Leu
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Ala Val Leu Cys Ala Gly Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys
20 25 30

Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe
35 40 45

Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr
50 55 60

Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu
65 70 75 80

Glu Asp Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly
85 90 95

Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val
100 105 110

Ser Thr Gly Ser Leu Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val
115 120 125

Ser Ala Gln Gly Phe Lys Ala Met Tyr Glu Val Leu Pro Ser His Thr
130 135 140

Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg
145 150 155 160

Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Ser Gly Tyr Ile
165 170 175

Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly
180 185 190

Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys

195 200 205

Gly Gly Thr Leu Arg Gly Thr Ser Gly Ser Ile Ser Ser Pro His Phe
210 215 220

Pro Ser Glu Tyr Asp Asn Asn Ala Asp Cys Thr Trp Thr Ile Leu Ala
225 230 235 240

Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu
245 250 255

Glu Gly Tyr Asp Phe Leu Glu Ile Ser Gly Thr Glu Ala Pro Ser Ile
260 265 270

Trp Leu Thr Gly Met Asn Leu Pro Ser Pro Val Ile Ser Ser Lys Asn
275 280 285

Trp Leu Arg Leu His Phe Thr Ser Asp Ser Asn His Arg Arg Lys Gly
290 295 300

Phe Asn Ala Gln Phe Gln Val Lys Lys Ala Ile Glu Leu Lys Ser Arg
305 310 315 320

Gly Val Lys Met Leu Pro Ser Lys Asp Ser Ser His Lys Asn Ser Val
325 330 335

Leu Thr Gln Gly Gly Val Ser Leu Ile Ser Asp Met Cys Pro Asp Pro
340 345 350

Gly Ile Pro Asp Asn Gly Arg Arg Ala Gly Ser Asp Phe Arg Val Gly
355 360 365

Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly Ala
370 375 380

Lys Gly Ile Thr Cys Gln Arg Val Thr Glu Thr Leu Ala Ala Trp Asn
385 390 395 400

Asp His Arg Pro Ile Cys Arg Ala Arg Thr Cys Gly Ser Asn Leu Arg
405 410 415

Gly Pro Ser Gly Val Ile Thr Ser Pro Asn Tyr Pro Val Gln Tyr Glu
420 425 430

Asp Asn Ala His Cys Val Trp Val Ile Thr Thr Thr Asp Pro Asp Lys
435 440 445

Val Ile Lys Leu Ala Phe Glu Glu Phe Glu Leu Glu Arg Gly Tyr Asp
450 455 460

Thr Leu Thr Val Gly Asp Ala Gly Lys Val Gly Asp Thr Arg Ser Val
465 470 475 480

Leu Tyr Val Leu Thr Gly Ser Ser Val Pro Asp Leu Ile Val Ser Met
485 490 495

Ser Asn Gln Met Trp Leu His Leu Gln Ser Asp Asp Ser Ile Gly Ser

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            500                 505                 510

Pro Gly Phe Lys Ala Val Tyr Gln Glu Ile Glu Lys Gly Gly Cys Gly
        515                 520                 525

Asp Pro Gly Ile Pro Ala Tyr Gly Lys Arg Thr Gly Ser Ser Phe Leu
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His Gly Asp Thr Leu Thr Phe Glu Cys Gln Ala Ala Phe Glu Leu Val
545                 550                 555                 560

Gly Glu Arg Val Ile Thr Cys Gln Lys Asn Asn Gln Trp Ser Gly Asn
                565                 570                 575

Lys Pro Ser Cys Val Phe Ser Cys Phe Phe Asn Phe Thr Ala Pro Ser
            580                 585                 590

Gly Ile Ile Leu Ser Pro Asn Tyr Pro Glu Glu Tyr Gly Asn Asn Met
        595                 600                 605

Asn Cys Val Trp Leu Ile Ile Ser Glu Pro Gly Ser Arg Ile His Leu
    610                 615                 620

Ile Phe Lys Asp Phe Asp Val Glu Pro Gln Phe Asp Phe Leu Ala Val
625                 630                 635                 640

Lys Asp Asp Gly Ile Ser Asp Ile Thr Val Leu Gly Thr Phe Ser Gly
                645                 650                 655

Asn Glu Val Pro Ala Gln Leu Ala Ser Ser Gly His Ile Val Arg Leu
            660                 665                 670

Glu Phe Gln Ser Asp His Ser Thr Thr Gly Arg Gly Phe Asn Ile Thr
        675                 680                 685

Tyr Thr Thr Phe Gly Gln Asn Glu Cys His Asp Pro Gly Ile Pro Val
    690                 695                 700

Asn Gly Arg Arg Phe Gly Asp Arg Phe Leu Leu Gly Ser Ser Val Ser
705                 710                 715                 720

Phe His Cys Asp Asp Gly Phe Val Lys Thr Gln Gly Ser Glu Ser Ile
                725                 730                 735

Thr Cys Ile Leu Gln Asp Gly Asn Val Val Trp Ser Ser Thr Val Pro
            740                 745                 750

Arg Cys Glu Ala Pro Cys Gly Gly His Leu Thr Ala Ser Ser Gly Val
        755                 760                 765

Ile Leu Pro Pro Gly Trp Pro Gly Tyr Tyr Lys Asp Ser Leu Asn Cys
    770                 775                 780

Glu Trp Val Ile Glu Ala Lys Pro Gly His Ser Ile Lys Ile Thr Phe
785                 790                 795                 800

Asp Arg Phe Gln Thr Glu Val Asn Tyr Asp Thr Leu Glu Val Arg Asp
```

805 810 815

Gly Pro Thr Ser Ser Ser Pro Leu Ile Gly Glu Tyr His Gly Thr Gln
820 825 830

Ala Pro Gln Phe Leu Ile Ser Thr Gly Asn Tyr Met Tyr Leu Leu Phe
835 840 845

Thr Thr Asp Ser Ser Arg Ala Ser Val Gly Phe Leu Ile His Tyr Glu
850 855 860

Ser Val Thr Leu Glu Ser Asp Ser Cys Leu Asp Pro Gly Ile Pro Val
865 870 875 880

Asn Gly Gln Arg His Gly Ser Asn Phe Gly Ile Arg Ser Thr Val Thr
885 890 895

Phe Ser Cys Asp Pro Gly Tyr Thr Leu Ser Asp Asp Glu Pro Leu Val
900 905 910

Cys Glu Lys Asn His Gln Trp Asn His Ala Leu Pro Ser Cys Asp Ala
915 920 925

Leu Cys Gly Gly Tyr Ile His Gly Lys Ser Gly Thr Val Leu Ser Pro
930 935 940

Gly Phe Pro Asp Phe Tyr Pro Asn Ser Leu Asn Cys Thr Trp Thr Ile
945 950 955 960

Glu Val Ser His Gly Lys Gly Val Gln Met Asn Phe His Thr Phe His
965 970 975

Leu Glu Ser Ser His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser Phe
980 985 990

Ser Glu Pro Val Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr Ile
995 1000 1005

Lys Ala Gly Leu Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile Ser
1010 1015 1020

Asp Phe Ser Ile Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ala Glu Tyr
1025 1030 1035 1040

Asp Leu Glu Pro Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg Arg
1045 1050 1055

Ile Gly Phe Gln Phe Gly Val Gly Asp Thr Leu Ala Phe Thr Cys Phe
1060 1065 1070

Gln Gly Tyr Arg Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly Gly
1075 1080 1085

Gly Arg Arg Val Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu Cys
1090 1095 1100

Gly Ala Ser Val Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn Phe

1105 1110 1115 1120

Pro Ser His Tyr Asp Asn Asn His Glu Cys Ile Tyr Lys Ile Glu Thr
1125 1130 1135

Glu Ala Gly Lys Gly Ile His Leu Arg Ala Arg Thr Phe Gln Leu Phe
1140 1145 1150

Glu Gly Asp Thr Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser Arg
1155 1160 1165

Ser Leu Gly Val Phe Thr Arg Ser Glu Phe Met Gly Leu Val Leu Asn
1170 1175 1180

Ser Thr Ser Asn Tyr Leu Arg Leu Glu Phe Asn Thr Asn Gly Ser Asp
1185 1190 1195 1200

Thr Ala Gln Gly Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val Lys
1205 1210 1215

Cys Glu Asp Pro Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp Asp
1220 1225 1230

Gly His Phe Thr Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly Tyr
1235 1240 1245

Ala Met His Gly Ser Ser Thr Leu Thr Cys Leu Ser Gly Asp Arg Arg
1250 1255 1260

Val Trp Asp Lys Pro Met Pro Ser Cys Val Ala Glu Cys Gly Gly Leu
1265 1270 1275 1280

Val His Ala Ala Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro Ala
1285 1290 1295

Pro Tyr Asp Asn Asn Leu His Cys Thr Trp Thr Ile Glu Ala Asp Pro
1300 1305 1310

Gly Lys Thr Ile Ser Leu His Phe Ile Val Phe Asp Thr Glu Thr Ala
1315 1320 1325

His Asp Ile Leu Lys Val Trp Asp Gly Pro Val Asp Ser Asn Ile Leu
1330 1335 1340

Leu Lys Glu Trp Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser Thr
1345 1350 1355 1360

Phe Asn Ser Leu Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser Lys
1365 1370 1375

Ser Gly Phe Ser Ile Gln Phe Ser Thr Ser Ile Ala Ser Thr Cys Asn
1380 1385 1390

Asp Pro Gly Met Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg Glu
1395 1400 1405

Pro Gly Asp Thr Ile Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu Gln

1410 1415 1420

Gly Pro Ala Lys Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe Trp
1425 1430 1435 1440

Gln Pro Asp Pro Pro Ser Cys Ile Ala Ala Cys Gly Gly Asn Leu Thr
1445 1450 1455

Gly Pro Ala Gly Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr Pro
1460 1465 1470

Pro Gly Lys Glu Cys Asp Trp Arg Ile Lys Val Asn Pro Asp Phe Val
1475 1480 1485

Ile Ala Leu Ile Phe Lys Ser Phe Ser Met Glu Pro Ser Tyr Asp Phe
1490 1495 1500

Leu His Ile Tyr Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly Ser
1505 1510 1515 1520

Phe Gln Gly Ser Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn Ser
1525 1530 1535

Leu Phe Leu Ala Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly Phe
1540 1545 1550

Ala Ile Glu Phe Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro Gly
1555 1560 1565

Asn Ile Met Asn Gly Thr Arg Ile Gly Thr Asp Phe Lys Leu Gly Ser
1570 1575 1580

Thr Val Thr Tyr Gln Cys Asp Ser Gly Tyr Lys Ile Val Asp Pro Ser
1585 1590 1595 1600

Ser Ile Glu Cys Val Thr Gly Ala Asp Gly Lys Pro Ser Trp Asp Arg
1605 1610 1615

Ala Leu Pro Ala Cys Gln Ala Pro Cys Gly Gly Gln Tyr Thr Gly Ser
1620 1625 1630

Glu Gly Val Val Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala Gly
1635 1640 1645

Gln Met Cys Val Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val Phe
1650 1655 1660

Gly Gln Phe Ala Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu Leu
1665 1670 1675 1680

Phe Asp Gly Thr His Pro Gln Ala Arg Leu Leu Ser Ser Leu Ser Gly
1685 1690 1695

Ser His Ser Gly Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile Leu
1700 1705 1710

Leu Arg Phe Ser Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His Phe

1715 1720 1725

Val Tyr Gln Ala Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser Val
1730 1735 1740

Pro Glu Pro Arg Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala Gly
1745 1750 1755 1760

Ser Ile Val Arg Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly Ser
1765 1770 1775

Thr Ala Ile Arg Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp Asn
1780 1785 1790

Asp Thr Ile Pro Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr Gln
1795 1800 1805

Arg Arg Gly Thr Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly Asn
1810 1815 1820

Asn Leu Asn Cys Val Trp Lys Ile Ile Val Ser Glu Gly Ser Gly Ile
1825 1830 1835 1840

Gln Ile Gln Val Ile Ser Phe Ala Thr Glu Gln Asn Trp Asp Ser Leu
1845 1850 1855

Glu Ile His Asp Gly Gly Asp Met Thr Ala Pro Arg Leu Gly Ser Phe
1860 1865 1870

Ser Gly Thr Thr Val Pro Ala Leu Leu Asn Ser Thr Ser Asn Gln Leu
1875 1880 1885

Cys Leu His Phe Gln Ser Asp Ile Ser Val Ala Ala Ala Gly Phe His
1890 1895 1900

Leu Glu Tyr Lys Thr Val Gly Leu Ala Ala Cys Gln Glu Pro Ala Leu
1905 1910 1915 1920

Pro Ser Asn Gly Ile Lys Ile Gly Asp Arg Tyr Met Val Asn Asp Val
1925 1930 1935

Leu Ser Phe Gln Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg Ser His
1940 1945 1950

Ile Ser Cys Met Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro Ser Pro
1955 1960 1965

Leu Cys Ile Ala Thr Cys Gly Gly Thr Leu Thr Ser Met Ser Gly Val
1970 1975 1980

Ile Leu Ser Pro Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu Asp Cys
1985 1990 1995 2000

Thr Trp Lys Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile Gln Phe
2005 2010 2015

Leu Asn Phe Ser Thr Glu Ala Asn His Asp Tyr Leu Glu Ile Gln Asn

2020 2025 2030

Gly Pro Tyr His Ser Ser Pro Met Met Gly Gln Phe Ser Gly Pro Asp
2035 2040 2045

Leu Pro Thr Ser Leu Leu Ser Thr Thr His Glu Thr Leu Ile Arg Phe
2050 2055 2060

Tyr Ser Asp His Ser Gln Asn Arg Gln Gly Phe Lys Leu Ser Tyr Gln
2065 2070 2075 2080

Ala Tyr Glu Leu Gln Asn Cys Pro Asp Pro Pro Ala Phe Gln Asn Gly
2085 2090 2095

Phe Met Ile Asn Ser Asp Tyr Ser Val Gly Gln Ser Ile Ser Phe Glu
2100 2105 2110

Cys Tyr Pro Gly Tyr Ile Leu Leu Gly His Pro Val Leu Thr Cys Gln
2115 2120 2125

His Gly Thr Asp Arg Asn Trp Asn Tyr Pro Phe Pro Arg Cys Asp Ala
2130 2135 2140

Pro Cys Gly Tyr Asn Val Thr Ser Gln Asn Gly Thr Ile Tyr Ser Pro
2145 2150 2155 2160

Gly Phe Pro Asp Glu Tyr Pro Ile Leu Lys Asp Cys Leu Trp Leu Val
2165 2170 2175

Thr Val Pro Pro Gly His Gly Val Tyr Ile Asn Phe Thr Leu Leu Gln
2180 2185 2190

Thr Glu Ala Val Asn Asp Tyr Ile Ala Val Trp Asp Gly Pro Asp Gln
2195 2200 2205

Asn Ser Pro Gln Leu Gly Val Phe Ser Gly Asn Thr Ala Pro Glu Thr
2210 2215 2220

Ala Tyr Ser Ser Thr Asn Gln Val Leu Leu Lys Phe His Ser Asp Phe
2225 2230 2235 2240

Ser Asn Gly Gly Phe Phe Val Leu Asn Phe His Ala Phe Gln Leu Lys
2245 2250 2255

Arg Cys Pro Pro Pro Pro Ala Val Pro Gln Ala Asp Leu Leu Thr Glu
2260 2265 2270

Asp Glu Asp Phe Glu Ile Gly Asp Phe Val Lys Tyr Gln Cys His Pro
2275 2280 2285

Gly Tyr Thr Leu Leu Gly Ser Asp Thr Leu Thr Cys Lys Leu Ser Ser
2290 2295 2300

Gln Leu Leu Phe Gln Gly Ser Pro Pro Thr Cys Glu Ala Gln Cys Pro
2305 2310 2315 2320

Ala Asn Glu Val Arg Thr Glu Ser Ser Gly Val Ile Leu Ser Pro Gly

2325 2330 2335

Tyr Pro Gly Asn Tyr Phe Asn Ser Gln Thr Cys Ala Trp Ser Ile Lys
2340 2345 2350

Val Lys Pro Asn Phe Asn Ile Thr Leu Phe Val Asp Thr Phe Gln Ser
2355 2360 2365

Glu Lys Gln Phe Asp Ala Leu Glu Val Phe Asp Gly Ser Ser Gly Arg
2370 2375 2380

Ser Pro Leu Leu Val Val Leu Ser Gly Asn His Thr Glu Gln Ser Asn
2385 2390 2395 2400

Phe Thr Ser Arg Ser Asn His Leu Tyr Leu Arg Trp Ser Thr Asp His
2405 2410 2415

Ala Thr Ser Lys Lys Gly Phe Lys Ile Arg Tyr Ala Ala Pro Tyr Cys
2420 2425 2430

Ser Leu Thr Ser Thr Leu Arg Asn Gly Gly Ile Leu Asn Lys Thr Ala
2435 2440 2445

Gly Ala Val Gly Ser Lys Val His Tyr Phe Cys Lys Pro Gly Tyr Arg
2450 2455 2460

Met Ile Gly His Ser Asn Ala Thr Cys Arg Arg Asn Pro Val Gly Val
2465 2470 2475 2480

Tyr Gln Trp Asp Ser Met Ala Pro Leu Cys Gln Ala Val Ser Cys Gly
2485 2490 2495

Ile Pro Glu Ala Pro Gly Asn Gly Ser Phe Thr Gly Asn Glu Phe Thr
2500 2505 2510

Leu Asp Ser Lys Val Thr Tyr Glu Cys Asn Glu Gly Phe Lys Leu Asp
2515 2520 2525

Ala Ser Gln Glu Ala Thr Thr Val Cys Gln Glu Asp Gly Leu Trp Ser
2530 2535 2540

Asn Arg Gly Lys Pro Pro Thr Cys Lys Pro Val Pro Cys Pro Ser Ile
2545 2550 2555 2560

Glu Gly Gln Leu Ser Glu His Val Leu Trp Arg Leu Val Ser Gly Ser
2565 2570 2575

Leu Asn Glu Tyr Gly Ala Gln Val Leu Leu Ser Cys Ser Pro Gly Tyr
2580 2585 2590

Phe Leu Gln Gly Gln Arg Leu Leu Gln Cys Gln Ala Asn Gly Thr Trp
2595 2600 2605

Ser Thr Glu Glu Asp Arg Pro Arg Cys Lys Val Ile Ser Cys Gly Ser
2610 2615 2620

Leu Ser Phe Pro Pro Asn Gly Asn Lys Ile Gly Thr Leu Thr Ile Tyr

2625 2630 2635 2640

Gly Ala Thr Ala Ile Phe Thr Cys Asn Thr Gly Tyr Thr Leu Val Gly
2645 2650 2655

Ser His Val Arg Glu Cys Leu Ala Asn Gly Leu Trp Ser Gly Ser Glu
2660 2665 2670

Thr Arg Cys Leu Ala Gly His Cys Gly Ser Pro Asp Pro Ile Val Asn
2675 2680 2685

Gly His Ile Ser Gly Asp Gly Phe Ser Tyr Arg Asp Thr Val Val Tyr
2690 2695 2700

Gln Cys Asn Pro Gly Phe Arg Leu Val Gly Thr Ser Val Arg Ile Cys
2705 2710 2715 2720

Cys Arg Thr Thr Ser Gly Arg Gly Arg Leu Thr Val Cys Val Pro Ile
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Thr Cys Gly His Pro Gly Asn Pro Ala His Gly Leu Thr Asn Gly Thr
2740 2745 2750

Glu Phe Asn Leu Asn Asp Leu Val Asn Phe Thr Cys His Thr Gly Tyr
2755 2760 2765

Arg Leu Gln Gly Ala Ser Arg Ala Gln Cys Arg Ser Asn Gly Gln Trp
2770 2775 2780

Ser Ser Pro Leu Pro Ile Cys Arg Val Val Asn Cys Ser Asp Pro Gly
2785 2790 2795 2800

Ser Val Glu Asn Ala Val Arg His Gly Gln Gln Asn Phe Pro Glu Ser
2805 2810 2815

Phe Glu Tyr Gly Thr Ser Val Met Tyr His Cys Lys Thr Gly Phe Tyr
2820 2825 2830

Leu Leu Gly Ser Ser Ala Leu Thr Cys Met Ala Ser Gly Leu Trp Asp
2835 2840 2845

Arg Ser Leu Pro Lys Cys Leu Ala Ile Ser Cys Gly His Pro Gly Val
2850 2855 2860

Pro Ala Asn Ala Val Leu Thr Gly Glu Leu Phe Thr Tyr Gly Ala Thr
2865 2870 2875 2880

Val Gln Tyr Ser Cys Lys Gly Gly Gln Ile Leu Thr Gly Asn Ser Thr
2885 2890 2895

Arg Val Cys Gln Glu Asp Ser His Trp Ser Gly Ser Leu Pro His Cys
2900 2905 2910

Ser Gly Asn Ser Pro Gly Phe Cys Gly Asp Pro Gly Thr Pro Ala His
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Gly Ser Arg Leu Gly Asp Glu Phe Lys Thr Lys Ser Leu Leu Arg Phe

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Ser Cys Glu Met Gly His Gln Leu Arg Gly Phe Ala Glu Arg Thr Cys
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Leu Val Asn Gly Ser Trp Ser Gly Val Gln Pro Val Cys Glu Ala Val
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Ser Cys Gly Asn Pro Gly Thr Pro Thr Asn Gly Met Ile Leu Ser Ser
2980 2985 2990

Asp Gly Ile Leu Phe Ser Ser Ser Val Ile Tyr Ala Cys Trp Glu Gly
2995 3000 3005

Tyr Lys Thr Ser Gly Leu Met Thr Arg His Cys Thr Ala Asn Gly Thr
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Trp Thr Gly Thr Ala Pro Asp Cys Thr Ile Ile Ser Cys Gly Asp Pro
3025 3030 3035 3040

Gly Thr Leu Pro Asn Gly Ile Gln Phe Gly Thr Asp Phe Thr Phe Asn
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Lys Thr Val Ser Tyr Gln Cys Asn Pro Gly Tyr Leu Met Glu Pro Pro
3060 3065 3070

Thr Ser Pro Thr Ile Arg Cys Thr Lys Asp Gly Thr Trp Asn Gln Ser
3075 3080 3085

Arg Pro Leu Cys Lys Ala Val Leu Cys Asn Gln Pro Pro Pro Val Pro
3090 3095 3100

Asn Gly Lys Val Glu Gly Ser Asp Phe Arg Trp Gly Ala Ser Ile Ser
3105 3110 3115 3120

Tyr Ser Cys Val Asp Gly Tyr Gln Leu Ser His Ser Ala Ile Leu Ser
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Cys Glu Gly Arg Gly Val Trp Lys Gly Glu Val Pro Gln Cys Leu Pro
3140 3145 3150

Val Phe Cys Gly Asp Pro Gly Thr Pro Ala Glu Gly Arg Leu Ser Gly
3155 3160 3165

Lys Ser Phe Thr Phe Lys Ser Glu Val Phe Ile Gln Cys Lys Pro Pro
3170 3175 3180

Phe Val Leu Val Gly Ser Ser Arg Arg Thr Cys Gln Ala Asp Gly Ile
3185 3190 3195 3200

Trp Ser Gly Ile Gln Pro Thr Cys Ile Asp Pro Ala His Thr Ala Cys
3205 3210 3215

Pro Asp Pro Gly Thr Pro His Phe Gly Ile Gln Asn Ser Ser Lys Gly
3220 3225 3230

Tyr Glu Val Gly Ser Thr Val Phe Phe Arg Cys Arg Lys Gly Tyr His

3235 3240 3245

Ile Gln Gly Ser Thr Thr Arg Thr Cys Leu Ala Asn Leu Thr Trp Ser
3250 3255 3260

Gly Ile Gln Thr Glu Cys Ile Pro His Ala Cys Arg Gln Pro Glu Thr
3265 3270 3275 3280

Pro Ala His Ala Asp Val Arg Ala Ile Asp Leu Pro Ala Phe Gly Tyr
3285 3290 3295

Thr Leu Val Tyr Thr Cys His Pro Gly Phe Phe Leu Ala Gly Gly Ser
3300 3305 3310

Glu His Arg Thr Cys Lys Ala Asp Met Lys Trp Thr Gly Lys Ser Pro
3315 3320 3325

Val Cys Lys Ser Lys Gly Val Arg Glu Val Asn Glu Thr Val Thr Lys
3330 3335 3340

Thr Pro Val Pro Ser Asp Val Phe Phe Ile Asn Ser Val Trp Lys Gly
3345 3350 3355 3360

Tyr Tyr Glu Tyr Leu Gly Lys Arg Gln Pro Ala Thr Leu Thr Val Asp
3365 3370 3375

Trp Phe Asn Ala Thr Ser Ser Lys Val Asn Ala Thr Phe Thr Ala Ala
3380 3385 3390

Ser Arg Val Gln Leu Glu Leu Thr Gly Val Tyr Lys Lys Glu Glu Ala
3395 3400 3405

His Leu Leu Leu Lys Ala Phe His Ile Lys Gly Pro Ala Asp Ile Phe
3410 3415 3420

Val Ser Lys Phe Glu Asn Asp Asn Trp Gly Leu Asp Gly Tyr Val Ser
3425 3430 3435 3440

Ser Gly Leu Glu Arg Gly Gly Phe Ser Phe Gln Gly Asp Ile His Gly
3445 3450 3455

Lys Asp Phe Gly Lys Phe Lys Leu Glu Arg Gln Asp Pro Ser Asn Ser
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Asp Ala Asp Ser Ser Asn His Tyr Gln Gly Thr Ser Ser Gly Ser Val
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Ala Ala Ala Ile Leu Val Pro Phe Phe Ala Leu Ile Leu Ser Gly Phe
3490 3495 3500

Ala Phe Tyr Leu Tyr Lys His Arg Thr Arg Pro Lys Val Gln Tyr Asn
3505 3510 3515 3520

Gly Tyr Ala Gly His Glu Asn Ser Asn Gly Gln Ala Ser Phe Glu Asn
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Pro Met Tyr Asp Thr Asn Leu Lys Pro Thr Glu Ala Lys Ala Val Arg

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Phe Asp Thr Thr Leu Asn Thr Val Cys Thr Val Val
3555 3560

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<212> PRT
<213> Homo sapiens

<400> 46
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Leu Val Leu Cys Ala Arg Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys
20 25 30

Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe
35 40 45

Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr
50 55 60

Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu
65 70 75 80

Glu Asn Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly
85 90 95

Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val
100 105 110

Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val
115 120 125

Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Val Leu Pro Ser His Thr
130 135 140

Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg
145 150 155 160

Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Pro Gly Tyr Ile
165 170 175

Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly
180 185 190

Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys
195 200 205

Gly Gly Thr Leu Arg Gly Thr Ser Ser Ser Ile Ser Ser Pro His Phe
210 215 220

Pro Ser Glu Tyr Glu Asn Asn Ala Asp Cys Thr Trp Thr Ile Leu Ala
225 230 235 240

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Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu
                245                 250                 255

Glu Gly Tyr Asp Phe Leu Glu Ile Ser Gly Thr Glu Ala Pro Ser Ile
            260                 265                 270

Trp Leu Thr Gly Met Asn Leu Pro Ser Pro Val Ile Ser Ser Lys Asn
        275                 280                 285

Trp Leu Arg Leu His Phe Thr Ser Asp Ser Asn His Arg Arg Lys Gly
    290                 295                 300

Phe Asn Ala Gln Phe Gln Val Lys Lys Ala Ile Glu Leu Lys Ser Arg
305                 310                 315                 320

Gly Val Lys Met Leu Pro Ser Lys Asp Gly Ser His Lys Asn Ser Val
                325                 330                 335

Leu Ser Gln Gly Gly Val Ala Leu Val Ser His Met Cys Leu Asp Pro
            340                 345                 350

Gly Ile Pro Glu Asn Gly Arg Arg Ala Gly Ser Asp Phe Ser Arg Val
        355                 360                 365

Gly Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly
    370                 375                 380

Ser Lys Ser Ile Thr Cys Gln Arg Val Thr Glu Thr Leu Ala Ala Trp
385                 390                 395                 400

Ser Asp His Arg Pro Ile Cys Arg Ala Arg Thr Cys Gly Ser Asn Leu
                405                 410                 415

Arg Gly Pro Ser Gly Val Ile Thr Ser Pro Asn Tyr Pro Val Gln Tyr
            420                 425                 430

Glu Asp Asn Ala His Cys Val Trp Val Ile Thr Thr Thr Asp Pro Asp
        435                 440                 445

Lys Val Ile Lys Leu Ala Phe Glu Glu Phe Glu Leu Glu Arg Gly Tyr
    450                 455                 460

Asp Thr Leu Thr Val Gly Asp Ala Gly Lys Val Gly Asp Thr Arg Ser
465                 470                 475                 480

Val Leu Tyr Val Leu Thr Gly Ser Ser Val Pro Asp Leu Ile Val Ser
                485                 490                 495

Met Ser Asn Gln Met Trp Leu His Leu Gln Ser Asp Asp Ser Ile Gly
            500                 505                 510

Ser Pro Gly Phe Lys Ala Val Tyr Gln Glu Ile Glu Lys Gly Gly Cys
        515                 520                 525

Gly Asp Pro Gly Ile Pro Ala Tyr Gly Lys Arg Thr Gly Ser Ser Phe
    530                 535                 540
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Leu His Gly Asp Thr Leu Thr Phe Glu Cys Pro Ala Ala Phe Glu Leu
545 550 555 560

Val Gly Glu Arg Val Ile Thr Cys Gln Gln Asn Asn Gln Trp Ser Gly
565 570 575

Asn Lys Pro Ser Cys Val Phe Ser Cys Phe Phe Asn Phe Thr Ala Ser
580 585 590

Ser Gly Ile Ile Leu Ser Pro Asn Tyr Pro Glu Glu Tyr Gly Asn Asn
595 600 605

Met Asn Cys Val Trp Leu Ile Ile Ser Glu Pro Gly Ser Arg Ile His
610 615 620

Leu Ile Phe Asn Asp Phe Asp Val Glu Pro Gln Phe Asp Phe Leu Ala
625 630 635 640

Val Lys Asp Asn Gly Ile Ser Asp Ile Thr Val Leu Gly Thr Phe Ser
645 650 655

Gly Asn Glu Val Pro Ser Gln Leu Ala Ser Ser Gly His Ile Val Arg
660 665 670

Leu Glu Phe Gln Ser Asp His Ser Thr Thr Gly Arg Gly Phe Asn Ile
675 680 685

Thr Tyr Thr Thr Phe Gly Gln Asn Glu Cys His Asp Pro Gly Ile Pro
690 695 700

Ile Asn Gly Arg Arg Phe Gly Asp Arg Phe Leu Leu Gly Ser Ser Val
705 710 715 720

Ser Phe His Cys Asp Asp Gly Phe Val Lys Thr Gln Gly Ser Glu Ser
725 730 735

Ile Thr Cys Ile Leu Gln Asp Gly Asn Val Val Trp Ser Ser Thr Val
740 745 750

Pro Arg Cys Glu Ala Pro Cys Gly Gly His Leu Thr Ala Ser Ser Gly
755 760 765

Val Ile Leu Pro Pro Gly Trp Pro Gly Tyr Tyr Lys Asp Ser Leu His
770 775 780

Cys Glu Trp Ile Ile Glu Ala Lys Pro Gly His Ser Ile Lys Met Thr
785 790 795 800

Phe Asp Arg Phe Gln Thr Glu Val Asn Tyr Asp Thr Leu Glu Val Arg
805 810 815

Asp Gly Pro Ala Ser Ser Ser Pro Leu Ile Gly Glu Tyr His Gly Thr
820 825 830

Gln Ala Pro Gln Phe Leu Ile Ser Thr Gly Asn Phe Met Tyr Leu Leu
835 840 845

Phe Thr Thr Asp Asn Ser Arg Ser Ser Ile Gly Phe Leu Ile His Tyr
850 855 860

Glu Ser Val Thr Leu Glu Ser Asp Ser Cys Leu Asp Pro Gly Ile Pro
865 870 875 880

Val Asn Gly His Arg His Gly Gly Asp Phe Gly Ile Arg Ser Thr Val
885 890 895

Thr Phe Ser Cys Asp Pro Gly Tyr Thr Leu Ser Asp Asp Glu Pro Leu
900 905 910

Val Cys Glu Arg Asn His Gln Trp Asn His Ala Leu Pro Ser Cys Asp
915 920 925

Ala Leu Cys Gly Gly Tyr Ile Gln Gly Lys Ser Gly Thr Val Leu Ser
930 935 940

Pro Gly Phe Pro Asp Phe Tyr Pro Asn Ser Leu Asn Cys Thr Trp Thr
945 950 955 960

Ile Glu Val Ser His Gly Lys Gly Val Gln Met Ile Phe His Thr Phe
965 970 975

His Leu Glu Ser Ser His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser
980 985 990

Phe Ser Glu Pro Val Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr
995 1000 1005

Ile Lys Ala Gly Leu Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile
1010 1015 1020

Ser Asp Phe Ser Ile Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ser Glu
1025 1030 1035 1040

Tyr Asp Leu Glu Pro Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg
1045 1050 1055

Arg Ile Gly Phe His Phe Gly Val Gly Asp Ser Leu Thr Phe Ser Cys
1060 1065 1070

Phe Leu Gly Tyr Arg Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly
1075 1080 1085

Gly Gly Arg Arg Val Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu
1090 1095 1100

Cys Gly Ala Ser Val Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn
1105 1110 1115 1120

Phe Pro Ser Asn Tyr Asp Asn Thr His Glu Cys Ile Tyr Lys Ile Glu
1125 1130 1135

Thr Glu Ala Gly Lys Gly Ile His Leu Arg Thr Arg Ser Phe Gln Leu
1140 1145 1150

Phe Glu Gly Asp Thr Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser
1155 1160 1165

Arg Pro Leu Gly Thr Phe Thr Lys Asn Glu Leu Leu Gly Leu Ile Leu
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Asn Ser Thr Ser Asn His Leu Trp Leu Glu Phe Asn Thr Asn Gly Ser
1185 1190 1195 1200

Asp Thr Asp Gln Gly Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val
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Lys Cys Glu Asp Pro Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp
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Glu Gly His Phe Thr Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly
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Tyr Ala Met His Gly Ser Asn Thr Leu Thr Cys Leu Ser Gly Asp Arg
1250 1255 1260

Arg Val Trp Asp Lys Pro Leu Pro Ser Cys Ile Ala Glu Cys Gly Gly
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Gln Ile His Ala Ala Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro
1285 1290 1295

Ala Pro Tyr Asp Asn Asn Leu His Cys Thr Trp Ile Ile Glu Ala Asp
1300 1305 1310

Pro Gly Lys Thr Ile Ser Leu His Phe Ile Val Phe Asp Thr Glu Met
1315 1320 1325

Ala His Asp Ile Leu Lys Val Trp Asp Gly Pro Val Asp Ser Asp Ile
1330 1335 1340

Leu Leu Lys Glu Trp Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser
1345 1350 1355 1360

Thr Phe Asn Ser Leu Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser
1365 1370 1375

Lys Ser Gly Phe Ser Ile Gln Phe Ser Thr Ser Ile Ala Ala Thr Cys
1380 1385 1390

Asn Asp Pro Gly Met Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg
1395 1400 1405

Glu Ala Gly Asp Thr Val Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu
1410 1415 1420

Gln Gly Gln Ala Lys Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe
1425 1430 1435 1440

Trp Gln Pro Asp Pro Pro Thr Cys Ile Ala Ala Cys Gly Gly Asn Leu
1445 1450 1455

Thr Gly Pro Ala Gly Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr
1460 1465 1470

Pro Pro Gly Lys Glu Cys Asp Trp Arg Val Lys Val Asn Pro Asp Phe
1475 1480 1485

Val Ile Ala Leu Ile Phe Lys Ser Phe Asn Met Glu Pro Ser Tyr Asp
1490 1495 1500

Phe Leu His Ile Tyr Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly
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Ser Tyr Gln Gly Ser Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn
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Ser Leu Phe Leu Ala Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly
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Phe Ala Ile Glu Phe Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro
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Gly Asn Ile Met Asn Gly Thr Arg Val Gly Thr Asp Phe Lys Leu Gly
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Ser Thr Ile Thr Tyr Gln Cys Asp Ser Gly Tyr Lys Ile Leu Asp Pro
1585 1590 1595 1600

Ser Ser Ile Thr Cys Val Ile Gly Ala Asp Gly Lys Pro Ser Trp Asp
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Gln Val Leu Pro Ser Cys Asn Ala Pro Cys Gly Gly Gln Tyr Thr Gly
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Ser Glu Gly Val Val Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala
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Gly Gln Ile Cys Leu Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val
1650 1655 1660

Phe Gly Gln Phe Ala Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu
1665 1670 1675 1680

Leu Phe Asp Gly Thr His Ala Gln Ala Arg Leu Leu Ser Ser Leu Ser
1685 1690 1695

Gly Ser His Ser Gly Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile
1700 1705 1710

Leu Leu Arg Phe Ser Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His
1715 1720 1725

Phe Val Tyr Gln Ala Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser
1730 1735 1740

Val Pro Glu Pro Arg Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala
1745 1750 1755 1760

Gly Ser Ile Val Arg Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly
1765 1770 1775

Ser Thr Ala Leu His Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp
1780 1785 1790

Asn Asp Thr Ile Pro Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr
1795 1800 1805

Gln Arg Arg Gly Thr Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly
1810 1815 1820

Asn Asn Leu Asn Cys Ile Trp Lys Ile Ile Val Thr Glu Gly Ser Gly
1825 1830 1835 1840

Ile Gln Asp Pro Ser Asp Gln Phe Cys His Gly Ala Glu Leu Gly Leu
1845 1850 1855

Pro Phe Glu Ile His Asp Gly Gly Asp Val Thr Ala Pro Arg Leu Gly
1860 1865 1870

Ser Phe Ser Gly Thr Thr Val Pro Ala Leu Leu Asn Ser Thr Ser Asn
1875 1880 1885

Gln Leu Tyr Leu His Phe Gln Ser Asp Ile Ser Val Ala Ala Ala Gly
1890 1895 1900

Phe His Leu Glu Tyr Lys Thr Val Gly Leu Ala Ala Cys Gln Glu Pro
1905 1910 1915 1920

Ala Leu Pro Ser Asn Ser Ile Lys Ile Gly Asp Arg Tyr Met Val Asn
1925 1930 1935

Asp Val Leu Ser Phe Gln Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg
1940 1945 1950

Ser His Ile Ser Cys Met Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro
1955 1960 1965

Ser Pro Leu Cys Ile Ala Thr Cys Gly Gly Thr Leu Ser Thr Leu Gly
1970 1975 1980

Gly Val Ile Leu Ser Pro Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu
1985 1990 1995 2000

Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile
2005 2010 2015

Gln Phe Leu Asn Phe Ser Thr Glu Ala Asn His Asp Phe Leu Glu Ile
2020 2025 2030

Gln Asn Gly Pro Tyr His Thr Ser Pro Met Ile Gly Gln Phe Ser Gly
2035 2040 2045

Thr Asp Leu Pro Ala Ala Leu Leu Ser Thr Thr His Glu Thr Leu Ile
2050 2055 2060

His Phe Tyr Ser Asp His Ser Gln Asn Arg Gln Gly Phe Lys Leu Ala
2065 2070 2075 2080

Tyr Gln Ala Tyr Glu Leu Gln Asn Cys Pro Asp Pro Pro Pro Phe Gln
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Asn Gly Tyr Met Ile Asn Ser Asp Tyr Ser Val Gly Gln Ser Val Ser
2100 2105 2110

Phe Glu Cys Tyr Pro Gly Tyr Ile Leu Ile Gly His Pro Val Leu Thr
2115 2120 2125

Cys Gln His Gly Ile Asn Arg Asn Trp Asn Tyr Pro Phe Pro Arg Cys
2130 2135 2140

Asp Ala Pro Cys Gly Tyr Asn Val Thr Ser Gln Asn Gly Thr Ile Tyr
2145 2150 2155 2160

Ser Pro Gly Phe Pro Asp Glu Tyr Pro Ile Leu Lys Asp Cys Ile Trp
2165 2170 2175

Leu Ile Thr Val Pro Pro Gly His Gly Val Tyr Ile Asn Phe Thr Leu
2180 2185 2190

Leu Gln Thr Glu Ala Val Asn Asp Tyr Ile Ala Val Trp Asp Gly Pro
2195 2200 2205

Asp Gln Asn Ser Pro Gln Leu Gly Val Phe Ser Gly Asn Thr Ala Leu
2210 2215 2220

Glu Thr Ala Tyr Ser Ser Thr Asn Gln Val Leu Leu Lys Phe His Ser
2225 2230 2235 2240

Asp Phe Ser Asn Gly Gly Phe Phe Val Leu Asn Phe His Ala Phe Gln
2245 2250 2255

Leu Lys Lys Cys Gln Pro Pro Pro Ala Val Pro Gln Ala Glu Met Leu
2260 2265 2270

Thr Glu Asp Asp Asp Phe Glu Ile Gly Asp Phe Val Lys Tyr Gln Cys
2275 2280 2285

His Pro Gly Tyr Thr Leu Val Gly Thr Asp Ile Leu Thr Cys Lys Leu
2290 2295 2300

Ser Ser Gln Leu Gln Phe Glu Gly Ser Leu Pro Thr Cys Glu Ala Gln
2305 2310 2315 2320

Cys Pro Ala Asn Glu Val Arg Thr Gly Ser Ser Gly Val Ile Leu Ser
2325 2330 2335

Pro Gly Tyr Pro Gly Asn Tyr Phe Asn Ser Gln Thr Cys Ser Trp Ser
2340 2345 2350

Ile Lys Val Glu Pro Asn Tyr Asn Ile Thr Ile Phe Val Asp Thr Phe
2355 2360 2365

Gln Ser Glu Lys Gln Phe Asp Ala Leu Glu Val Phe Asp Gly Ser Ser
2370 2375 2380

Gly Gln Ser Pro Leu Leu Val Val Leu Ser Gly Asn His Thr Glu Gln
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Ser Asn Phe Thr Ser Arg Ser Asn Gln Leu Tyr Leu Arg Trp Ser Thr
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Asp His Ala Thr Ser Lys Lys Gly Phe Lys Ile Arg Tyr Ala Ala Pro
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Tyr Cys Ser Leu Thr His Pro Leu Lys Asn Gly Gly Ile Leu Asn Arg
2435 2440 2445

Thr Ala Gly Ala Val Gly Ser Lys Val His Tyr Phe Cys Lys Pro Gly
2450 2455 2460

Tyr Arg Met Val Gly His Ser Asn Ala Thr Cys Arg Arg Asn Pro Leu
2465 2470 2475 2480

Gly Met Tyr Gln Trp Asp Ser Leu Thr Pro Leu Cys Gln Ala Val Ser
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Cys Gly Ile Pro Glu Ser Pro Gly Asn Gly Ser Phe Thr Gly Asn Glu
2500 2505 2510

Phe Thr Leu Asp Ser Lys Val Val Tyr Glu Cys His Glu Gly Phe Lys
2515 2520 2525

Leu Glu Ser Ser Gln Gln Ala Thr Ala Val Cys Gln Glu Asp Gly Leu
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Trp Ser Asn Lys Gly Lys Pro Pro Met Cys Lys Pro Val Ala Cys Pro
2545 2550 2555 2560

Ser Ile Glu Ala Gln Leu Ser Glu His Val Ile Trp Arg Leu Val Ser
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Gly Ser Leu Asn Glu Tyr Gly Ala Gln Val Leu Leu Ser Cys Ser Pro
2580 2585 2590

Gly Tyr Tyr Leu Glu Gly Trp Arg Leu Leu Arg Cys Gln Ala Asn Gly
2595 2600 2605

Thr Trp Asn Ile Gly Asp Glu Arg Pro Ser Cys Arg Ala Gly His Cys
2610 2615 2620

Gly Ser Pro Asp Pro Ile Val Asn Gly His Ile Ser Gly Asp Gly Phe
2625 2630 2635 2640

Ser Tyr Arg Asp Thr Val Val Tyr Gln Cys Asn Pro Gly Phe Arg Leu
2645 2650 2655

Val Gly Thr Ser Val Arg Ile Cys Leu Gln Asp His Lys Trp Ser Gly
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Gln Thr Pro Val Cys Val Pro Ile Thr Cys Gly His Pro Gly Asn Pro
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Ala His Gly Phe Thr Asn Gly Ser Glu Phe Asn Leu Asn Asp Val Val
2690 2695 2700

Asn Phe Thr Cys Asn Thr Gly Tyr Leu Leu Gln Gly Val Ser Arg Ala
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Gln Cys Arg Ser Asn Gly Gln Trp Ser Ser Pro Leu Pro Thr Cys Arg
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Val Val Asn Cys Ser Asp Pro Gly Phe Val Glu Asn Ala Ile Arg His
2740 2745 2750

Gly Gln Gln Asn Phe Pro Glu Ser Phe Glu Tyr Gly Met Ser Ile Leu
2755 2760 2765

Tyr His Cys Lys Lys Gly Phe His Leu Leu Gly Ser Ser Ala Leu Thr
2770 2775 2780

Cys Met Ala Asn Gly Leu Trp Asp Arg Ser Leu Pro Lys Cys Leu Ala
2785 2790 2795 2800

Ile Ser Cys Gly His Pro Gly Val Pro Ala Asn Ala Val Leu Thr Gly
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Glu Leu Phe Thr Tyr Gly Ala Val Val His Tyr Ser Cys Arg Gly Ser
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Glu Ser Leu Ile Gly Asn Asp Thr Arg Val Cys Gln Glu Asp Ser His
2835 2840 2845

Trp Ser Gly Ala Leu Pro His Cys Thr Gly Asn Asn Pro Gly Phe Cys
2850 2855 2860

Gly Asp Pro Gly Thr Pro Ala His Gly Ser Arg Leu Gly Asp Asp Phe
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Lys Thr Lys Ser Leu Leu Arg Phe Ser Cys Glu Met Gly His Gln Leu
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Arg Gly Ser Pro Glu Arg Thr Cys Leu Leu Asn Gly Ser Trp Ser Gly
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Leu Gln Pro Val Cys Glu Ala Val Ser Cys Gly Asn Pro Gly Thr Pro
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Thr Asn Gly Met Ile Val Ser Ser Asp Gly Ile Leu Phe Ser Ser Ser
2930 2935 2940

Val Ile Tyr Ala Cys Trp Glu Gly Tyr Lys Thr Ser Gly Leu Met Thr
2945 2950 2955 2960

Arg His Cys Thr Ala Asn Gly Thr Trp Thr Gly Thr Ala Pro Asp Cys
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Thr Ile Ile Ser Cys Gly Asp Pro Gly Thr Leu Ala Asn Gly Ile Gln
2980 2985 2990

Phe Gly Thr Asp Phe Thr Phe Asn Lys Thr Val Ser Tyr Gln Cys Asn
2995 3000 3005

Pro Gly Tyr Val Met Glu Ala Val Thr Ser Ala Thr Ile Arg Cys Thr
3010 3015 3020

Lys Asp Gly Arg Trp Asn Pro Ser Lys Pro Val Cys Lys Ala Val Leu
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Cys Pro Gln Pro Pro Pro Val Gln Asn Gly Thr Val Glu Gly Ser Asp
3045 3050 3055

Phe Arg Trp Gly Ser Ser Ile Ser Tyr Ser Cys Met Asp Gly Tyr Gln
3060 3065 3070

Leu Ser His Ser Ala Ile Leu Ser Cys Glu Gly Arg Gly Val Trp Lys
3075 3080 3085

Gly Glu Ile Pro Gln Cys Leu Pro Val Phe Cys Gly Asp Pro Gly Ile
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Pro Ala Glu Gly Arg Leu Ser Gly Lys Ser Phe Thr Tyr Lys Ser Glu
3105 3110 3115 3120

Val Phe Phe Gln Cys Lys Ser Pro Phe Ile Leu Val Gly Ser Ser Arg
3125 3130 3135

Arg Val Cys Gln Ala Asp Gly Thr Trp Ser Gly Ile Gln Pro Thr Cys
3140 3145 3150

Ile Asp Pro Ala His Asn Thr Cys Pro Asp Pro Gly Thr Pro His Phe
3155 3160 3165

Gly Ile Gln Asn Ser Ser Arg Gly Tyr Glu Val Gly Ser Thr Val Phe
3170 3175 3180

Phe Arg Cys Arg Lys Gly Tyr His Ile Gln Gly Ser Thr Thr Arg Thr
3185 3190 3195 3200

Cys Leu Ala Asn Leu Thr Trp Ser Gly Ile Gln Thr Glu Cys Ile Pro
3205 3210 3215

His Ala Cys Arg Gln Pro Glu Thr Pro Ala His Ala Asp Val Arg Ala
3220 3225 3230

Ile Asp Leu Pro Thr Phe Gly Tyr Thr Leu Val Tyr Thr Cys His Pro
3235 3240 3245

Gly Phe Phe Leu Ala Gly Gly Ser Glu His Arg Thr Cys Lys Ala Asp
3250 3255 3260

Met Lys Trp Thr Gly Lys Ser Pro Val Cys Lys Ser Lys Gly Val Arg
3265 3270 3275 3280

Glu Val Asn Glu Thr Val Thr Lys Thr Pro Val Pro Ser Asp Val Phe
3285 3290 3295

Phe Val Asn Ser Leu Trp Lys Gly Tyr Tyr Glu Tyr Leu Gly Lys Arg
3300 3305 3310

Gln Pro Ala Thr Leu Thr Val Asp Trp Phe Asn Ala Thr Ser Ser Lys
3315 3320 3325

Val Asn Ala Thr Phe Ser Glu Ala Ser Pro Val Glu Leu Lys Leu Thr
3330 3335 3340

Gly Ile Tyr Lys Lys Glu Glu Ala His Leu Leu Leu Lys Ala Phe Gln
3345 3350 3355 3360

Ile Lys Gly Gln Ala Asp Ile Phe Val Ser Lys Phe Glu Asn Asp Asn
3365 3370 3375

Trp Gly Leu Asp Gly Tyr Val Ser Ser Gly Leu Glu Arg Gly Gly Phe
3380 3385 3390

Thr Phe Gln Gly Asp Ile His Gly Lys Asp Phe Gly Lys Phe Lys Leu
3395 3400 3405

Glu Arg Gln Asp Pro Leu Asn Pro Asp Gln Asp Ser Ser Ser His Tyr
3410 3415 3420

His Gly Thr Ser Ser Gly Ser Val Ala Ala Ala Ile Leu Val Pro Phe
3425 3430 3435 3440

Phe Ala Leu Ile Leu Ser Gly Phe Ala Phe Tyr Leu Tyr Lys His Arg
3445 3450 3455

Thr Arg Pro Lys Val Gln Tyr Asn Gly Tyr Ala Gly His Glu Asn Ser
3460 3465 3470

Asn Gly Gln Ala Ser Phe Glu Asn Pro Met Tyr Asp Thr Asn Leu Lys
3475 3480 3485

Pro Thr Glu Ala Lys Ala Val Arg Phe Asp Thr Thr Leu Asn Thr Val
3490 3495 3500

Cys Thr Val Val
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<212> PRT
<213> Homo sapiens

<400> 47
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Leu Val Leu Cys Ala Arg Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys
20 25 30

Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe
35 40 45

Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr
50 55 60

Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu
65 70 75 80

Glu Asn Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly
85 90 95

Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val
100 105 110

Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val
115 120 125

Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Val Leu Pro Ser His Thr
130 135 140

Cys Gly Asn Pro Gly Glu Ile Leu Lys Gly Val Leu His Gly Thr Arg
145 150 155 160

Phe Asn Ile Gly Asp Lys Ile Arg Tyr Ser Cys Leu Pro Gly Tyr Ile
165 170 175

Leu Glu Gly His Ala Ile Leu Thr Cys Ile Val Ser Pro Gly Asn Gly
180 185 190

Ala Ser Trp Asp Phe Pro Ala Pro Phe Cys Arg Ala Glu Gly Ala Cys
195 200 205

Gly Gly Thr Leu Arg Gly Thr Ser Ser Ser Ile Ser Ser Pro His Phe
210 215 220

Pro Ser Glu Tyr Glu Asn Asn Ala Asp Cys Thr Trp Thr Ile Leu Ala
225 230 235 240

Glu Pro Gly Asp Thr Ile Ala Leu Val Phe Thr Asp Phe Gln Leu Glu
245 250 255

Glu Gly Tyr Asp Phe Leu Glu Ile Ser Gly Thr Glu Ala Pro Ser Ile
260 265 270

Trp Leu Thr Gly Met Asn Leu Pro Ser Pro Val Ile Ser Ser Lys Asn
275 280 285

Trp Leu Arg Leu His Phe Thr Ser Asp Ser Asn His Arg Arg Lys Gly
290 295 300

Phe Asn Ala Gln Phe Gln Val Lys Lys Ala Ile Glu Leu Lys Ser Arg
305 310 315 320

Gly Val Lys Met Leu Pro Ser Lys Asp Gly Ser His Lys Asn Ser Val
325 330 335

Leu Ser Gln Gly Gly Val Ala Leu Val Ser His Met Cys Leu Asp Pro
340 345 350

Gly Ile Pro Glu Asn Gly Arg Arg Ala Gly Ser Asp Phe Ser Arg Val
355 360 365

Gly Ala Asn Val Gln Phe Ser Cys Glu Asp Asn Tyr Val Leu Gln Gly
370 375 380

Ser Lys Ser Ile Thr Cys Gln Arg Val Thr Glu Thr Leu Ala Ala Trp
385 390 395 400

Ser Asp His Arg Pro Ile Cys Arg Ala Arg Thr Cys Gly Ser Asn Leu
405 410 415

Arg Gly Pro Ser Gly Val Ile Thr Ser Pro Asn Tyr Pro Val Gln Tyr
420 425 430

Glu Asp Asn Ala His Cys Val Trp Val Ile Thr Thr Thr Asp Pro Asp
435 440 445

Lys Val Ile Lys Leu Ala Phe Glu Glu Phe Glu Leu Glu Arg Gly Tyr
450 455 460

Asp Thr Leu Thr Val Gly Asp Ala Gly Lys Val Gly Asp Thr Arg Ser
465 470 475 480

Val Leu Tyr Val Leu Thr Gly Ser Ser Val Pro Asp Leu Ile Val Ser
485 490 495

Met Ser Asn Gln Met Trp Leu His Leu Gln Ser Asp Asp Ser Ile Gly
500 505 510

Ser Pro Gly Phe Lys Ala Val Tyr Gln Glu Ile Glu Lys Gly Gly Cys
515 520 525

Gly Asp Pro Gly Ile Pro Ala Tyr Gly Lys Arg Thr Gly Ser Ser Phe
530 535 540

Leu His Gly Asp Thr Leu Thr Phe Glu Cys Pro Ala Ala Phe Glu Leu
545 550 555 560

Val Gly Glu Arg Val Ile Thr Cys Gln Gln Asn Asn Gln Trp Ser Gly
565 570 575

Asn Lys Pro Ser Cys Val Phe Ser Cys Phe Phe Asn Phe Thr Ala Ser
580 585 590

Ser Gly Ile Ile Leu Ser Pro Asn Tyr Pro Glu Glu Tyr Gly Asn Asn
595 600 605

Met Asn Cys Val Trp Leu Ile Ile Ser Glu Pro Gly Ser Arg Ile His
610 615 620

Leu Ile Phe Asn Asp Phe Asp Val Glu Pro Gln Phe Asp Phe Leu Ala
625 630 635 640

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Val Lys Asp Asn Gly Ile Ser Asp Ile Thr Val Leu Gly Thr Phe Ser
                645                 650                 655

Gly Asn Glu Val Pro Ser Gln Leu Ala Ser Ser Gly His Ile Val Arg
            660                 665                 670

Leu Glu Phe Gln Ser Asp His Ser Thr Thr Gly Arg Gly Phe Asn Ile
        675                 680                 685

Thr Tyr Thr Thr Phe Gly Gln Asn Glu Cys His Asp Pro Gly Ile Pro
    690                 695                 700

Ile Asn Gly Arg Arg Phe Gly Asp Arg Phe Leu Leu Gly Ser Ser Val
705                 710                 715                 720

Ser Phe His Cys Asp Asp Gly Phe Val Lys Thr Gln Gly Ser Glu Ser
                725                 730                 735

Ile Thr Cys Ile Leu Gln Asp Gly Asn Val Val Trp Ser Ser Thr Val
            740                 745                 750

Pro Arg Cys Glu Ala Pro Cys Gly Gly His Leu Thr Ala Ser Ser Gly
        755                 760                 765

Val Ile Leu Pro Pro Gly Trp Pro Gly Tyr Tyr Lys Asp Ser Leu His
    770                 775                 780

Cys Glu Trp Ile Ile Glu Ala Lys Pro Gly His Ser Ile Lys Met Thr
785                 790                 795                 800

Phe Asp Arg Phe Gln Thr Glu Val Asn Tyr Asp Thr Leu Glu Val Arg
                805                 810                 815

Asp Gly Pro Ala Ser Ser Ser Pro Leu Ile Gly Glu Tyr His Gly Thr
            820                 825                 830

Gln Ala Pro Gln Phe Leu Ile Ser Thr Gly Asn Phe Met Tyr Leu Leu
        835                 840                 845

Phe Thr Thr Asp Asn Ser Arg Ser Ser Ile Gly Phe Leu Ile His Tyr
    850                 855                 860

Glu Ser Val Thr Leu Glu Ser Asp Ser Cys Leu Asp Pro Gly Ile Pro
865                 870                 875                 880

Val Asn Gly His Arg His Gly Gly Asp Phe Gly Ile Arg Ser Thr Val
                885                 890                 895

Thr Phe Ser Cys Asp Pro Gly Tyr Thr Leu Ser Asp Asp Glu Pro Leu
            900                 905                 910

Val Cys Glu Arg Asn His Gln Trp Asn His Ala Leu Pro Ser Cys Asp
        915                 920                 925

Ala Leu Cys Gly Gly Tyr Ile Gln Gly Lys Ser Gly Thr Val Leu Ser
    930                 935                 940
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Pro Gly Phe Pro Asp Phe Tyr Pro Asn Ser Leu Asn Cys Thr Trp Thr
945 950 955 960

Ile Glu Val Ser His Gly Lys Gly Val Gln Met Ile Phe His Thr Phe
965 970 975

His Leu Glu Ser Ser His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser
980 985 990

Phe Ser Glu Pro Val Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr
995 1000 1005

Ile Lys Ala Gly Leu Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile
1010 1015 1020

Ser Asp Phe Ser Ile Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ser Glu
1025 1030 1035 1040

Tyr Asp Leu Glu Pro Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg
1045 1050 1055

Arg Ile Gly Phe His Phe Gly Val Gly Asp Ser Leu Thr Phe Ser Cys
1060 1065 1070

Phe Leu Gly Tyr Arg Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly
1075 1080 1085

Gly Gly Arg Arg Val Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu
1090 1095 1100

Cys Gly Ala Ser Val Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn
1105 1110 1115 1120

Phe Pro Ser Asn Tyr Asp Asn Thr His Glu Cys Ile Tyr Lys Ile Glu
1125 1130 1135

Thr Glu Ala Gly Lys Gly Ile His Leu Arg Thr Arg Ser Phe Gln Leu
1140 1145 1150

Phe Glu Gly Asp Thr Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser
1155 1160 1165

Arg Pro Leu Gly Thr Phe Thr Lys Asn Glu Leu Leu Gly Leu Ile Leu
1170 1175 1180

Asn Ser Thr Ser Asn His Leu Trp Leu Glu Phe Asn Thr Asn Gly Ser
1185 1190 1195 1200

Asp Thr Asp Gln Gly Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val
1205 1210 1215

Lys Cys Glu Asp Pro Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp
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Glu Gly His Phe Thr Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly
1235 1240 1245

Tyr Ala Met His Gly Ser Asn Thr Leu Thr Cys Leu Ser Gly Asp Arg
1250 1255 1260

Arg Val Trp Asp Lys Pro Leu Pro Ser Cys Ile Ala Glu Cys Gly Gly
1265 1270 1275 1280

Gln Ile His Ala Ala Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro
1285 1290 1295

Ala Pro Tyr Asp Asn Asn Leu His Cys Thr Trp Ile Ile Glu Ala Asp
1300 1305 1310

Pro Gly Lys Thr Ile Ser Leu His Phe Ile Val Phe Asp Thr Glu Met
1315 1320 1325

Ala His Asp Ile Leu Lys Val Trp Asp Gly Pro Val Asp Ser Asp Ile
1330 1335 1340

Leu Leu Lys Glu Trp Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser
1345 1350 1355 1360

Thr Phe Asn Ser Leu Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser
1365 1370 1375

Lys Ser Gly Phe Ser Ile Gln Phe Ser Thr Ser Ile Ala Ala Thr Cys
1380 1385 1390

Asn Asp Pro Gly Met Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg
1395 1400 1405

Glu Ala Gly Asp Thr Val Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu
1410 1415 1420

Gln Gly Gln Ala Lys Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe
1425 1430 1435 1440

Trp Gln Pro Asp Pro Pro Thr Cys Ile Ala Ala Cys Gly Gly Asn Leu
1445 1450 1455

Thr Gly Pro Ala Gly Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr
1460 1465 1470

Pro Pro Gly Lys Glu Cys Asp Trp Arg Val Lys Val Asn Pro Asp Phe
1475 1480 1485

Val Ile Ala Leu Ile Phe Lys Ser Phe Asn Met Glu Pro Ser Tyr Asp
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Phe Leu His Ile Tyr Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly
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Ser Tyr Gln Gly Ser Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn
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Ser Leu Phe Leu Ala Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly
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Phe Ala Ile Glu Phe Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro
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Gly Asn Ile Met Asn Gly Thr Arg Val Gly Thr Asp Phe Lys Leu Gly
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Ser Thr Ile Thr Tyr Gln Cys Asp Ser Gly Tyr Lys Ile Leu Asp Pro
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Ser Ser Ile Thr Cys Val Ile Gly Ala Asp Gly Lys Pro Ser Trp Asp
1605 1610 1615

Gln Val Leu Pro Ser Cys Asn Ala Pro Cys Gly Gly Gln Tyr Thr Gly
1620 1625 1630

Ser Glu Gly Val Val Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala
1635 1640 1645

Gly Gln Ile Cys Leu Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val
1650 1655 1660

Phe Gly Gln Phe Ala Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu
1665 1670 1675 1680

Leu Phe Asp Gly Thr His Ala Gln Ala Arg Leu Leu Ser Ser Leu Ser
1685 1690 1695

Gly Ser His Ser Gly Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile
1700 1705 1710

Leu Leu Arg Phe Ser Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His
1715 1720 1725

Phe Val Tyr Gln Ala Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser
1730 1735 1740

Val Pro Glu Pro Arg Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala
1745 1750 1755 1760

Gly Ser Ile Val Arg Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly
1765 1770 1775

Ser Thr Ala Leu His Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp
1780 1785 1790

Asn Asp Thr Ile Pro Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr
1795 1800 1805

Gln Arg Arg Gly Thr Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly
1810 1815 1820

Asn Asn Leu Asn Cys Ile Trp Lys Ile Ile Val Thr Glu Gly Ser Gly
1825 1830 1835 1840

Ile Gln Asp Pro Ser Asp Gln Phe Cys His Gly Ala Glu Leu Gly Leu
1845 1850 1855

Pro Phe Glu Ile His Asp Gly Gly Asp Val Thr Ala Pro Arg Leu Gly
1860 1865 1870

Ser Phe Ser Gly Thr Thr Val Pro Ala Leu Leu Asn Ser Thr Ser Asn
1875 1880 1885

Gln Leu Tyr Leu His Phe Gln Ser Asp Ile Ser Val Ala Ala Ala Gly
1890 1895 1900

Phe His Leu Glu Tyr Lys Thr Val Gly Leu Ala Ala Cys Gln Glu Pro
1905 1910 1915 1920

Ala Leu Pro Ser Asn Ser Ile Lys Ile Gly Asp Arg Tyr Met Val Asn
1925 1930 1935

Asp Val Leu Ser Phe Gln Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg
1940 1945 1950

Ser His Ile Ser Cys Met Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro
1955 1960 1965

Ser Pro Leu Cys Ile Ala Thr Cys Gly Gly Thr Leu Ser Thr Leu Gly
1970 1975 1980

Gly Val Ile Leu Ser Pro Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu
1985 1990 1995 2000

Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly Tyr Gly Ala His Ile
2005 2010 2015

Gln Phe Leu Asn Phe Ser Thr Glu Ala Asn His Asp Phe Leu Glu Ile
2020 2025 2030

Gln Asn Gly Pro Tyr His Thr Ser Pro Met Ile Gly Gln Phe Ser Gly
2035 2040 2045

Thr Asp Leu Pro Ala Ala Leu Leu Ser Thr Thr His Glu Thr Leu Ile
2050 2055 2060

His Phe Tyr Ser Asp His Ser Gln Asn Arg Gln Gly Phe Lys Leu Ala
2065 2070 2075 2080

Tyr Gln Ala Tyr Glu Leu Gln Asn Cys Pro Asp Pro Pro Pro Phe Gln
2085 2090 2095

Asn Gly Tyr Met Ile Asn Ser Asp Tyr Ser Val Gly Gln Ser Val Ser
2100 2105 2110

Phe Glu Cys Tyr Pro Gly Tyr Ile Leu Ile Gly His Pro Val Leu Thr
2115 2120 2125

Cys Gln His Gly Ile Asn Arg Asn Trp Asn Tyr Pro Phe Pro Arg Cys
2130 2135 2140

Asp Ala Pro Cys Gly Tyr Asn Val Thr Ser Gln Asn Gly Thr Ile Tyr
2145 2150 2155 2160

Ser Pro Gly Phe Pro Asp Glu Tyr Pro Ile Leu Lys Asp Cys Ile Trp
2165 2170 2175

Leu Ile Thr Val Pro Pro Gly His Gly Val Tyr Ile Asn Phe Thr Leu
2180 2185 2190

Leu Gln Thr Glu Ala Val Asn Asp Tyr Ile Ala Val Trp Asp Gly Pro
2195 2200 2205

Asp Gln Asn Ser Pro Gln Leu Gly Val Phe Ser Gly Asn Thr Ala Leu
2210 2215 2220

Glu Thr Ala Tyr Ser Ser Thr Asn Gln Val Leu Leu Lys Phe His Ser
2225 2230 2235 2240

Asp Phe Ser Asn Gly Gly Phe Phe Val Leu Asn Phe His Ala Phe Gln
2245 2250 2255

Leu Lys Lys Cys Gln Pro Pro Pro Ala Val Pro Gln Ala Glu Met Leu
2260 2265 2270

Thr Glu Asp Asp Asp Phe Glu Ile Gly Asp Phe Val Lys Tyr Gln Cys
2275 2280 2285

His Pro Gly Tyr Thr Leu Val Gly Thr Asp Ile Leu Thr Cys Lys Leu
2290 2295 2300

Ser Ser Gln Leu Gln Phe Glu Gly Ser Leu Pro Thr Cys Glu Ala Gln
2305 2310 2315 2320

Cys Pro Ala Asn Glu Val Arg Thr Gly Ser Ser Gly Val Ile Leu Ser
2325 2330 2335

Pro Gly Tyr Pro Gly Asn Tyr Phe Asn Ser Gln Thr Cys Ser Trp Ser
2340 2345 2350

Ile Lys Val Glu Pro Asn Tyr Asn Ile Thr Ile Phe Val Asp Thr Phe
2355 2360 2365

Gln Ser Glu Lys Gln Phe Asp Ala Leu Glu Val Phe Asp Gly Ser Ser
2370 2375 2380

Gly Gln Ser Pro Leu Leu Val Val Leu Ser Gly Asn His Thr Glu Gln
2385 2390 2395 2400

Ser Asn Phe Thr Ser Arg Ser Asn Gln Leu Tyr Leu Arg Trp Ser Thr
2405 2410 2415

Asp His Ala Thr Ser Lys Lys Gly Phe Lys Ile Arg Tyr Ala Ala Pro
2420 2425 2430

Tyr Cys Ser Leu Thr His Pro Leu Lys Asn Gly Gly Ile Leu Asn Arg
2435 2440 2445

Thr Ala Gly Ala Val Gly Ser Lys Val His Tyr Phe Cys Lys Pro Gly
2450 2455 2460

Tyr Arg Met Val Gly His Ser Asn Ala Thr Cys Arg Arg Asn Pro Leu
2465 2470 2475 2480

Gly Met Tyr Gln Trp Asp Ser Leu Thr Pro Leu Cys Gln Ala Val Ser
2485 2490 2495

Cys Gly Ile Pro Glu Ser Pro Gly Asn Gly Ser Phe Thr Gly Asn Glu
2500 2505 2510

Phe Thr Leu Asp Ser Lys Val Val Tyr Glu Cys His Glu Gly Phe Lys
2515 2520 2525

Leu Glu Ser Ser Gln Gln Ala Thr Ala Val Cys Gln Glu Asp Gly Leu
2530 2535 2540

Trp Ser Asn Lys Gly Lys Pro Pro Met Cys Lys Pro Val Ala Cys Pro
2545 2550 2555 2560

Ser Ile Glu Ala Gln Leu Ser Glu His Val Ile Trp Arg Leu Val Ser
2565 2570 2575

Gly Ser Leu Asn Glu Tyr Gly Ala Gln Val Leu Leu Ser Cys Ser Pro
2580 2585 2590

Gly Tyr Tyr Leu Glu Gly Trp Arg Leu Leu Arg Cys Gln Ala Asn Gly
2595 2600 2605

Thr Trp Asn Ile Gly Asp Glu Arg Pro Ser Cys Arg Ala Gly His Cys
2610 2615 2620

Gly Ser Pro Asp Pro Ile Val Asn Gly His Ile Ser Gly Asp Gly Phe
2625 2630 2635 2640

Ser Tyr Arg Asp Thr Val Val Tyr Gln Cys Asn Pro Gly Phe Arg Leu
2645 2650 2655

Val Gly Thr Ser Val Arg Ile Cys Leu Gln Asp His Lys Trp Ser Gly
2660 2665 2670

Gln Thr Pro Val Cys Val Pro Ile Thr Cys Gly His Pro Gly Asn Pro
2675 2680 2685

Ala His Gly Phe Thr Asn Gly Ser Glu Phe Asn Leu Asn Asp Val Val
2690 2695 2700

Asn Phe Thr Cys Asn Thr Gly Tyr Leu Leu Gln Gly Val Ser Arg Ala
2705 2710 2715 2720

Gln Cys Arg Ser Asn Gly Gln Trp Ser Ser Pro Leu Pro Thr Cys Arg
2725 2730 2735

Val Val Asn Cys Ser Asp Pro Gly Phe Val Glu Asn Ala Ile Arg His
2740 2745 2750

Gly Gln Gln Asn Phe Pro Glu Ser Phe Glu Tyr Gly Met Ser Ile Leu
2755 2760 2765

Tyr His Cys Lys Lys Gly Phe His Leu Leu Gly Ser Ser Ala Leu Thr
2770 2775 2780

Cys Met Ala Asn Gly Leu Trp Asp Arg Ser Leu Pro Lys Cys Leu Ala
2785 2790 2795 2800

Ile Ser Cys Gly His Pro Gly Val Pro Ala Asn Ala Val Leu Thr Gly
2805 2810 2815

Glu Leu Phe Thr Tyr Gly Ala Val Val His Tyr Ser Cys Arg Gly Ser
2820 2825 2830

Glu Ser Leu Ile Gly Asn Asp Thr Arg Val Cys Gln Glu Asp Ser His
2835 2840 2845

Trp Ser Gly Ala Leu Pro His Cys Thr Gly Asn Asn Pro Gly Phe Cys
2850 2855 2860

Gly Asp Pro Gly Thr Pro Ala His Gly Ser Arg Leu Gly Asp Asp Phe
2865 2870 2875 2880

Lys Thr Lys Ser Leu Leu Arg Phe Ser Cys Glu Met Gly His Gln Leu
2885 2890 2895

Arg Gly Ser Pro Glu Arg Thr Cys Leu Leu Asn Gly Ser Trp Ser Gly
2900 2905 2910

Leu Gln Pro Val Cys Glu Ala Val Leu Cys Pro Gln Pro Pro Pro Val
2915 2920 2925

Gln Asn Gly Thr Val Glu Gly Ser Asp Phe Arg Trp Gly Ser Ser Ile
2930 2935 2940

Ser Tyr Ser Cys Met Asp Gly Tyr Gln Leu Ser His Ser Ala Ile Leu
2945 2950 2955 2960

Ser Cys Glu Gly Arg Gly Val Trp Lys Gly Glu Ile Pro Gln Cys Leu
2965 2970 2975

Pro Val Phe Cys Gly Asp Pro Gly Ile Pro Ala Glu Gly Arg Leu Ser
2980 2985 2990

Gly Lys Ser Phe Thr Tyr Lys Ser Glu Val Phe Phe Gln Cys Lys Ser
2995 3000 3005

Pro Phe Ile Leu Val Gly Ser Ser Arg Arg Val Cys Gln Ala Asp Gly
3010 3015 3020

Thr Trp Ser Gly Ile Gln Pro Thr Cys Ile Asp Pro Ala His Asn Thr
3025 3030 3035 3040

Cys Pro Asp Pro Gly Thr Pro His Phe Gly Ile Gln Asn Ser Ser Arg
3045 3050 3055

Gly Tyr Glu Val Gly Ser Thr Val Phe Phe Arg Cys Arg Lys Gly Tyr
3060 3065 3070

His Ile Gln Gly Ser Thr Thr Arg Thr Cys Leu Ala Asn Leu Thr Trp
3075 3080 3085

Ser Gly Ile Gln Thr Glu Cys Ile Pro His Ala Cys Arg Gln Pro Glu
3090 3095 3100

Thr Pro Ala His Ala Asp Val Arg Ala Ile Asp Leu Pro Thr Phe Gly
3105 3110 3115 3120

Tyr Thr Leu Val Tyr Thr Cys His Pro Gly Phe Phe Leu Ala Gly Gly
3125 3130 3135

Ser Glu His Arg Thr Cys Lys Ala Asp Met Lys Trp Thr Gly Lys Ser
3140 3145 3150

Pro Val Cys Lys Ser Lys Gly Val Arg Glu Val Asn Glu Thr Val Thr
3155 3160 3165

Lys Thr Pro Val Pro Ser Asp Val Phe Phe Val Asn Ser Leu Trp Lys
3170 3175 3180

Gly Tyr Tyr Glu Tyr Leu Gly Lys Arg Gln Pro Ala Thr Leu Thr Val
3185 3190 3195 3200

Asp Trp Phe Asn Ala Thr Ser Ser Lys Val Asn Ala Thr Phe Ser Glu
3205 3210 3215

Ala Ser Pro Val Glu Leu Lys Leu Thr Gly Ile Tyr Lys Lys Glu Glu
3220 3225 3230

Ala His Leu Leu Leu Lys Ala Phe Gln Ile Lys Gly Gln Ala Asp Ile
3235 3240 3245

Phe Val Ser Lys Phe Glu Asn Asp Asn Trp Gly Leu Asp Gly Tyr Val
3250 3255 3260

Ser Ser Gly Leu Glu Arg Gly Gly Phe Thr Phe Gln Gly Asp Ile His
3265 3270 3275 3280

Gly Lys Asp Phe Gly Lys Phe Lys Leu Glu Arg Gln Asp Pro Leu Asn
3285 3290 3295

Pro Asp Gln Asp Ser Ser Ser His Tyr His Gly Thr Ser Ser Gly Ser
3300 3305 3310

Val Ala Ala Ala Ile Leu Val Pro Phe Phe Ala Leu Ile Leu Ser Gly
3315 3320 3325

Phe Ala Phe Tyr Leu Tyr Lys His Arg Thr Arg Pro Lys Val Gln Tyr
3330 3335 3340

Asn Gly Tyr Ala Gly His Glu Asn Ser Asn Gly Gln Ala Ser Phe Glu
3345 3350 3355 3360

Asn Pro Met Tyr Asp Thr Asn Leu Lys Pro Thr Glu Ala Lys Ala Val
3365 3370 3375

```
Arg Phe Asp Thr Thr Leu Asn Thr Val Cys Thr Val Val
          3380                3385


<210> 48
<211> 1043
<212> PRT
<213> Homo sapiens

<400> 48
Met Ile Phe His Thr Phe His Leu Glu Ser Ser His Asp Tyr Leu Leu
  1               5                  10                  15

Ile Thr Glu Asp Gly Ser Phe Ser Glu Pro Val Ala Arg Leu Thr Gly
             20                  25                  30

Ser Val Leu Pro His Thr Ile Lys Ala Gly Leu Phe Gly Asn Phe Thr
         35                  40                  45

Ala Gln Leu Arg Phe Ile Ser Asp Phe Ser Ile Ser Tyr Glu Gly Phe
     50                  55                  60

Asn Ile Thr Phe Ser Glu Tyr Asp Leu Glu Pro Cys Asp Asp Pro Gly
 65                  70                  75                  80

Val Pro Ala Phe Ser Arg Arg Ile Gly Phe His Phe Gly Val Gly Asp
                 85                  90                  95

Ser Leu Thr Phe Ser Cys Phe Leu Gly Tyr Arg Leu Glu Gly Ala Thr
            100                 105                 110

Lys Leu Thr Cys Leu Gly Gly Gly Arg Arg Val Trp Ser Ala Pro Leu
        115                 120                 125

Pro Arg Cys Val Ala Glu Cys Gly Ala Ser Val Lys Gly Asn Glu Gly
    130                 135                 140

Thr Leu Leu Ser Pro Asn Phe Pro Ser Asn Tyr Asp Asn Asn His Glu
145                 150                 155                 160

Cys Ile Tyr Lys Ile Glu Thr Glu Ala Gly Lys Gly Ile His Leu Arg
                165                 170                 175

Thr Arg Ser Phe Gln Leu Phe Glu Gly Asp Thr Leu Lys Val Tyr Asp
            180                 185                 190

Gly Lys Asp Ser Ser Ser Arg Pro Leu Gly Thr Phe Thr Lys Asn Glu
        195                 200                 205

Leu Leu Gly Leu Ile Leu Asn Ser Thr Ser Asn His Leu Trp Leu Glu
    210                 215                 220

Phe Asn Thr Asn Gly Ser Asp Thr Asp Gln Gly Phe Gln Leu Thr Tyr
225                 230                 235                 240

Thr Ser Phe Asp Leu Val Lys Cys Glu Asp Pro Gly Ile Pro Asn Tyr
```

245 250 255

Gly Tyr Arg Ile Arg Asp Glu Gly His Phe Thr Asp Thr Val Val Leu
260 265 270

Tyr Ser Cys Asn Pro Gly Tyr Ala Met His Gly Ser Asn Thr Leu Thr
275 280 285

Cys Leu Ser Gly Asp Arg Arg Val Trp Asp Lys Pro Leu Pro Ser Cys
290 295 300

Ile Ala Glu Cys Gly Gly Gln Ile His Ala Ala Thr Ser Gly Arg Ile
305 310 315 320

Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Asp Asn Asn Leu His Cys Thr
325 330 335

Trp Ile Ile Glu Ala Asp Pro Gly Lys Thr Ile Ser Leu His Phe Ile
340 345 350

Val Phe Asp Thr Glu Met Ala His Asp Ile Leu Lys Val Trp Asp Gly
355 360 365

Pro Val Asp Ser Asp Ile Leu Leu Lys Glu Trp Ser Gly Ser Ala Leu
370 375 380

Pro Glu Asp Ile His Ser Thr Phe Asn Ser Leu Thr Leu Gln Phe Asp
385 390 395 400

Ser Asp Phe Phe Ile Ser Lys Ser Gly Phe Ser Ile Gln Phe Ser Thr
405 410 415

Ser Ile Ala Ala Thr Cys Asn Asp Pro Gly Met Pro Gln Asn Gly Thr
420 425 430

Arg Tyr Gly Asp Ser Arg Glu Ala Gly Asp Thr Val Thr Phe Gln Cys
435 440 445

Asp Pro Gly Tyr Gln Leu Gln Gly Gln Ala Lys Ile Thr Cys Val Gln
450 455 460

Leu Asn Asn Arg Phe Phe Trp Gln Pro Asp Pro Pro Thr Cys Ile Ala
465 470 475 480

Ala Cys Gly Gly Asn Leu Thr Gly Pro Ala Gly Val Ile Leu Ser Pro
485 490 495

Asn Tyr Pro Gln Pro Tyr Pro Pro Gly Lys Glu Cys Asp Trp Arg Val
500 505 510

Lys Val Asn Pro Asp Phe Val Ile Ala Leu Ile Phe Lys Ser Phe Asn
515 520 525

Met Glu Pro Ser Tyr Asp Phe Leu His Ile Tyr Glu Gly Glu Asp Ser
530 535 540

Asn Ser Pro Leu Ile Gly Ser Tyr Gln Gly Ser Gln Ala Pro Glu Arg

545 550 555 560

Ile Glu Ser Ser Gly Asn Ser Leu Phe Leu Ala Phe Arg Ser Asp Ala
565 570 575

Ser Val Gly Leu Ser Gly Phe Ala Ile Glu Phe Lys Glu Lys Pro Arg
580 585 590

Glu Ala Cys Phe Asp Pro Gly Asn Ile Met Asn Gly Thr Arg Val Gly
595 600 605

Thr Asp Phe Lys Leu Gly Ser Thr Ile Thr Tyr Gln Cys Asp Ser Gly
610 615 620

Tyr Lys Ile Leu Asp Pro Ser Ser Ile Thr Cys Val Ile Gly Ala Asp
625 630 635 640

Gly Lys Pro Ser Trp Asp Gln Val Leu Pro Ser Cys Asn Ala Pro Cys
645 650 655

Gly Gly Gln Tyr Thr Gly Ser Glu Gly Val Val Leu Ser Pro Asn Tyr
660 665 670

Pro His Asn Tyr Thr Ala Gly Gln Ile Cys Leu Tyr Ser Ile Thr Val
675 680 685

Pro Lys Glu Phe Val Val Phe Gly Gln Phe Ala Tyr Phe Gln Thr Ala
690 695 700

Leu Asn Asp Leu Ala Glu Leu Phe Asp Gly Thr His Ala Gln Ala Arg
705 710 715 720

Leu Leu Ser Ser Leu Ser Gly Ser His Ser Gly Glu Thr Leu Pro Leu
725 730 735

Ala Thr Ser Asn Gln Ile Leu Leu Arg Phe Ser Ala Lys Ser Gly Ala
740 745 750

Ser Ala Arg Gly Phe His Phe Val Tyr Gln Ala Val Pro Arg Thr Ser
755 760 765

Asp Thr Gln Cys Ser Ser Val Pro Glu Pro Arg Tyr Gly Arg Arg Ile
770 775 780

Gly Ser Glu Phe Ser Ala Gly Ser Ile Val Arg Phe Glu Cys Asn Pro
785 790 795 800

Gly Tyr Leu Leu Gln Gly Ser Thr Ala Leu His Cys Gln Ser Val Pro
805 810 815

Asn Ala Leu Ala Gln Trp Asn Asp Thr Ile Pro Ser Cys Val Val Pro
820 825 830

Cys Ser Gly Asn Phe Thr Gln Arg Arg Gly Thr Ile Leu Ser Pro Gly
835 840 845

Tyr Pro Glu Pro Tyr Gly Asn Asn Leu Asn Cys Ile Trp Lys Ile Ile

```
    850                 855                 860

Val Thr Glu Gly Ser Gly Ile Gln Ile Gln Val Ile Ser Phe Ala Thr
865                 870                 875                 880

Glu Gln Asn Trp Asp Ser Leu Glu Ile His Asp Gly Gly Asp Val Thr
                885                 890                 895

Ala Pro Arg Leu Gly Ser Phe Ser Gly Thr Thr Val Pro Ala Leu Leu
            900                 905                 910

Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe Gln Ser Asp Ile Ser
        915                 920                 925

Val Ala Ala Ala Gly Phe His Leu Glu Tyr Lys Thr Val Gly Leu Ala
    930                 935                 940

Ala Cys Gln Glu Pro Ala Leu Pro Ser Asn Ser Ile Lys Ile Gly Asp
945                 950                 955                 960

Arg Tyr Met Val Asn Asp Val Leu Ser Phe Gln Cys Glu Pro Gly Tyr
                965                 970                 975

Thr Leu Gln Gly Arg Ser His Ile Ser Cys Met Pro Gly Thr Val Arg
            980                 985                 990

Arg Trp Asn Tyr Pro Ser Pro Leu Cys Ile Ala Thr Cys Gly Gly Thr
        995                1000                1005

Leu Ser Thr Leu Gly Gly Val Ile Leu Ser Pro Gly Phe Pro Gly Ser
   1010                1015                1020

Tyr Pro Asn Asn Leu Asp Cys Thr Trp Arg Ile Ser Leu Pro Ile Gly
1025                1030                1035                1040

Tyr Gly Lys
```

<210> 49
<211> 1048
<212> PRT
<213> Homo sapiens

```
<400> 49
Gly Lys Gly Val Gln Met Ile Phe His Thr Phe His Leu Glu Ser Ser
  1               5                  10                  15

His Asp Tyr Leu Leu Ile Thr Glu Asp Gly Ser Phe Ser Glu Pro Val
             20                  25                  30

Ala Arg Leu Thr Gly Ser Val Leu Pro His Thr Ile Lys Ala Gly Leu
         35                  40                  45

Phe Gly Asn Phe Thr Ala Gln Leu Arg Phe Ile Ser Asp Phe Ser Ile
     50                  55                  60
```

```
Ser Tyr Glu Gly Phe Asn Ile Thr Phe Ser Glu Tyr Asp Leu Glu Pro
 65                  70                  75                  80

Cys Asp Asp Pro Gly Val Pro Ala Phe Ser Arg Arg Ile Gly Phe His
                85                  90                  95

Phe Gly Val Gly Asp Ser Leu Thr Phe Ser Cys Phe Leu Gly Tyr Arg
            100                 105                 110

Leu Glu Gly Ala Thr Lys Leu Thr Cys Leu Gly Gly Gly Arg Arg Val
        115                 120                 125

Trp Ser Ala Pro Leu Pro Arg Cys Val Ala Glu Cys Gly Ala Ser Val
    130                 135                 140

Lys Gly Asn Glu Gly Thr Leu Leu Ser Pro Asn Phe Pro Ser Asn Tyr
145                 150                 155                 160

Asp Asn Asn His Glu Cys Ile Tyr Lys Ile Glu Thr Glu Ala Gly Lys
                165                 170                 175

Gly Ile His Leu Arg Thr Arg Ser Phe Gln Leu Phe Glu Gly Asp Thr
            180                 185                 190

Leu Lys Val Tyr Asp Gly Lys Asp Ser Ser Ser Arg Pro Leu Gly Thr
        195                 200                 205

Phe Thr Lys Asn Glu Leu Leu Gly Leu Ile Leu Asn Ser Thr Ser Asn
    210                 215                 220

His Leu Trp Leu Glu Phe Asn Thr Asn Gly Ser Asp Thr Asp Gln Gly
225                 230                 235                 240

Phe Gln Leu Thr Tyr Thr Ser Phe Asp Leu Val Lys Cys Glu Asp Pro
                245                 250                 255

Gly Ile Pro Asn Tyr Gly Tyr Arg Ile Arg Asp Glu Gly His Phe Thr
            260                 265                 270

Asp Thr Val Val Leu Tyr Ser Cys Asn Pro Gly Tyr Ala Met His Gly
        275                 280                 285

Ser Asn Thr Leu Thr Cys Leu Ser Gly Asp Arg Arg Val Trp Asp Lys
    290                 295                 300

Pro Leu Pro Ser Cys Ile Ala Glu Cys Gly Gly Gln Ile His Ala Ala
305                 310                 315                 320

Thr Ser Gly Arg Ile Leu Ser Pro Gly Tyr Pro Ala Pro Tyr Asp Asn
                325                 330                 335

Asn Leu His Cys Thr Trp Ile Ile Glu Ala Asp Pro Gly Lys Thr Ile
            340                 345                 350

Ser Leu His Phe Ile Val Phe Asp Thr Glu Met Ala His Asp Ile Leu
        355                 360                 365
```

Lys Val Trp Asp Gly Pro Val Asp Ser Asp Ile Leu Leu Lys Glu Trp
370 375 380

Ser Gly Ser Ala Leu Pro Glu Asp Ile His Ser Thr Phe Asn Ser Leu
385 390 395 400

Thr Leu Gln Phe Asp Ser Asp Phe Phe Ile Ser Lys Ser Gly Phe Ser
405 410 415

Ile Gln Phe Ser Thr Ser Ile Ala Ala Thr Cys Asn Asp Pro Gly Met
420 425 430

Pro Gln Asn Gly Thr Arg Tyr Gly Asp Ser Arg Glu Ala Gly Asp Thr
435 440 445

Val Thr Phe Gln Cys Asp Pro Gly Tyr Gln Leu Gln Gly Gln Ala Lys
450 455 460

Ile Thr Cys Val Gln Leu Asn Asn Arg Phe Phe Trp Gln Pro Asp Pro
465 470 475 480

Pro Thr Cys Ile Ala Ala Cys Gly Gly Asn Leu Thr Gly Pro Ala Gly
485 490 495

Val Ile Leu Ser Pro Asn Tyr Pro Gln Pro Tyr Pro Pro Gly Lys Glu
500 505 510

Cys Asp Trp Arg Val Lys Val Asn Pro Asp Phe Val Ile Ala Leu Ile
515 520 525

Phe Lys Ser Phe Asn Met Glu Pro Ser Tyr Asp Phe Leu His Ile Tyr
530 535 540

Glu Gly Glu Asp Ser Asn Ser Pro Leu Ile Gly Ser Tyr Gln Gly Ser
545 550 555 560

Gln Ala Pro Glu Arg Ile Glu Ser Ser Gly Asn Ser Leu Phe Leu Ala
565 570 575

Phe Arg Ser Asp Ala Ser Val Gly Leu Ser Gly Phe Ala Ile Glu Phe
580 585 590

Lys Glu Lys Pro Arg Glu Ala Cys Phe Asp Pro Gly Asn Ile Met Asn
595 600 605

Gly Thr Arg Val Gly Thr Asp Phe Lys Leu Gly Ser Thr Ile Thr Tyr
610 615 620

Gln Cys Asp Ser Gly Tyr Lys Ile Leu Asp Pro Ser Ser Ile Thr Cys
625 630 635 640

Val Ile Gly Ala Asp Gly Lys Pro Ser Trp Asp Gln Val Leu Pro Ser
645 650 655

Cys Asn Ala Pro Cys Gly Gly Gln Tyr Thr Gly Ser Glu Gly Val Val
660 665 670

Leu Ser Pro Asn Tyr Pro His Asn Tyr Thr Ala Gly Gln Ile Cys Leu
675 680 685

Tyr Ser Ile Thr Val Pro Lys Glu Phe Val Val Phe Gly Gln Phe Ala
690 695 700

Tyr Phe Gln Thr Ala Leu Asn Asp Leu Ala Glu Leu Phe Asp Gly Thr
705 710 715 720

His Ala Gln Ala Arg Leu Leu Ser Ser Leu Ser Gly Ser His Ser Gly
725 730 735

Glu Thr Leu Pro Leu Ala Thr Ser Asn Gln Ile Leu Leu Arg Phe Ser
740 745 750

Ala Lys Ser Gly Ala Ser Ala Arg Gly Phe His Phe Val Tyr Gln Ala
755 760 765

Val Pro Arg Thr Ser Asp Thr Gln Cys Ser Ser Val Pro Glu Pro Arg
770 775 780

Tyr Gly Arg Arg Ile Gly Ser Glu Phe Ser Ala Gly Ser Ile Val Arg
785 790 795 800

Phe Glu Cys Asn Pro Gly Tyr Leu Leu Gln Gly Ser Thr Ala Leu His
805 810 815

Cys Gln Ser Val Pro Asn Ala Leu Ala Gln Trp Asn Asp Thr Ile Pro
820 825 830

Ser Cys Val Val Pro Cys Ser Gly Asn Phe Thr Gln Arg Arg Gly Thr
835 840 845

Ile Leu Ser Pro Gly Tyr Pro Glu Pro Tyr Gly Asn Asn Leu Asn Cys
850 855 860

Ile Trp Lys Ile Ile Val Thr Glu Gly Ser Gly Ile Gln Ile Gln Val
865 870 875 880

Ile Ser Phe Ala Thr Glu Gln Asn Trp Asp Ser Leu Glu Ile His Asp
885 890 895

Gly Gly Asp Val Thr Ala Pro Arg Leu Gly Ser Phe Ser Gly Thr Thr
900 905 910

Val Pro Ala Leu Leu Asn Ser Thr Ser Asn Gln Leu Tyr Leu His Phe
915 920 925

Gln Ser Asp Ile Ser Val Ala Ala Ala Gly Phe His Leu Glu Tyr Lys
930 935 940

Thr Val Gly Leu Ala Ala Cys Gln Glu Pro Ala Leu Pro Ser Asn Ser
945 950 955 960

Ile Lys Ile Gly Asp Arg Tyr Met Val Asn Asp Val Leu Ser Phe Gln
965 970 975

```
Cys Glu Pro Gly Tyr Thr Leu Gln Gly Arg Ser His Ile Ser Cys Met
            980                 985                 990

Pro Gly Thr Val Arg Arg Trp Asn Tyr Pro Ser Pro Leu Cys Ile Ala
        995                1000                1005

Thr Cys Gly Gly Thr Leu Ser Thr Leu Gly Gly Val Ile Leu Ser Pro
   1010                1015                1020

Gly Phe Pro Gly Ser Tyr Pro Asn Asn Leu Asp Cys Thr Trp Arg Ile
1025                1030                1035                1040

Ser Leu Pro Ile Gly Tyr Gly Lys
               1045
```

<210> 50
<211> 124
<212> PRT
<213> Homo sapiens

<400> 50

```
His Glu Gly Ile Ser Asn Pro Thr Ile Lys Asp Asn Gly Thr Phe Ser
  1               5                  10                  15

Cys Ala Val Lys Asn Pro Pro Asp Val His His Asn Ile Pro Met Thr
             20                  25                  30

Glu Leu Thr Val Thr Glu Arg Gly Phe Gly Thr Met Leu Ser Ser Val
         35                  40                  45

Ala Leu Leu Ser Ile Leu Val Phe Val Pro Ser Ala Val Val Val Ala
     50                  55                  60

Leu Leu Leu Val Arg Met Gly Arg Lys Ala Ala Gly Leu Lys Lys Arg
 65                  70                  75                  80

Ser Arg Ser Gly Tyr Lys Lys Ser Ser Ile Glu Val Ser Asp Asp Thr
                 85                  90                  95

Asp Gln Glu Glu Glu Glu Ala Cys Met Ala Arg Leu Cys Val Arg Cys
            100                 105                 110

Ala Glu Cys Leu Asp Ser Asp Tyr Glu Glu Thr Tyr
        115                 120
```

<210> 51
<211> 219
<212> PRT
<213> Homo sapiens

<400> 51

```
Ile Val Val Tyr Thr Asp Lys Glu Val His Gly Ala Val Gly Ser Gln
  1               5                  10                  15

Val Thr Leu Tyr Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp
```

```
            20                  25                  30

Leu Ser Phe Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile
        35                  40                  45

Ser Ile Phe His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly
    50                  55                  60

Thr Phe Lys Glu Arg Ile Gln Trp Val Gly Asp Pro His Arg Lys Asp
65                  70                  75                  80

Gly Ser Ile Val Ile His Asn Leu Asp Tyr Gly Asp Asn Gly Thr Phe
                85                  90                  95

Thr Cys Asp Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln
            100                 105                 110

Val Thr Leu Tyr Val Phe Glu Lys Val Pro Thr Arg Tyr Gly Val Val
        115                 120                 125

Leu Gly Ala Val Ile Gly Gly Val Leu Gly Val Val Leu Leu Ala Leu
    130                 135                 140

Leu Leu Phe Tyr Leu Ile Arg Tyr Cys Trp Leu Arg Arg Gln Ala Ala
145                 150                 155                 160

Leu Gln Arg Arg Leu His Ala Met Glu Lys Gly Lys Leu His Lys Thr
                165                 170                 175

Ala Lys Asp Ala Ser Lys Arg Gly Arg Gln Thr Pro Val Leu Tyr Ala
            180                 185                 190

Met Leu Asp His Ser Arg Ser Thr Lys Ala Ala Ser Glu Lys Lys Thr
        195                 200                 205

Lys Gly Leu Gly Glu Ser Arg Lys Asp Lys Lys
    210                 215


<210> 52
<211> 251
<212> PRT
<213> Homo sapiens

<400> 52
Met Ala Pro Gly Ala Pro Ser Ser Ser Pro Ser Pro Ile Leu Ala Val
  1               5                  10                  15

Leu Leu Phe Ser Ser Leu Val Leu Ser Pro Ala Gln Ala Ile Val Val
            20                  25                  30

Tyr Thr Asp Arg Glu Val His Gly Ala Val Gly Ser Arg Val Thr Leu
        35                  40                  45

His Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp Ile Ser Phe
    50                  55                  60
```

```
Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe
 65                  70                  75                  80

His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys
                 85                  90                  95

Glu Arg Ile Gln Trp Val Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile
            100                 105                 110

Val Ile His Asn Leu Asp Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp
        115                 120                 125

Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln Val Thr Leu
    130                 135                 140

Tyr Val Phe Glu Lys Val Pro Thr Arg Tyr Gly Val Val Leu Gly Ala
145                 150                 155                 160

Val Ile Gly Gly Val Leu Gly Val Val Leu Leu Leu Leu Leu Leu Phe
                165                 170                 175

Tyr Val Val Arg Tyr Cys Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg
            180                 185                 190

Arg Leu Ser Ala Met Glu Lys Gly Lys Leu His Lys Pro Gly Lys Asp
        195                 200                 205

Ala Ser Lys Arg Gly Arg Gln Thr Pro Val Leu Tyr Ala Gln Cys Trp
    210                 215                 220

Thr Thr Ala Glu Ala Pro Lys Leu Ser Val Arg Arg Arg Pro Arg Gly
225                 230                 235                 240

Trp Gly Ser Leu Ala Arg Ile Arg Asn Ser Gly
                245                 250
```

<210> 53
<211> 258
<212> PRT
<213> Homo sapiens

<400> 53

```
Met Leu Arg Ala Pro Ala Pro Ala Pro Ala Met Ala Pro Gly Ala Pro
  1               5                  10                  15

Ser Ser Ser Pro Ser Pro Ile Leu Ala Val Leu Leu Phe Ser Ser Leu
             20                  25                  30

Val Leu Ser Pro Ala Gln Ala Ile Val Val Tyr Thr Asp Arg Glu Val
         35                  40                  45

His Gly Ala Val Gly Ser Arg Val Thr Leu His Cys Ser Phe Trp Ser
     50                  55                  60

Ser Glu Trp Val Ser Asp Asp Ile Ser Phe Thr Trp Arg Tyr Gln Pro
 65                  70                  75                  80
```

```
Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe His Tyr Ala Lys Gly Gln
                85                  90                  95

Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys Glu Arg Ile Gln Trp Val
            100                 105                 110

Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile Val Ile His Asn Leu Asp
        115                 120                 125

Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp Val Lys Asn Pro Pro Asp
    130                 135                 140

Ile Val Gly Lys Thr Ser Gln Val Thr Leu Tyr Val Phe Glu Lys Val
145                 150                 155                 160

Pro Thr Arg Tyr Gly Val Val Leu Gly Ala Val Ile Gly Gly Val Leu
                165                 170                 175

Gly Val Val Leu Leu Leu Leu Leu Leu Phe Tyr Val Val Arg Tyr Cys
            180                 185                 190

Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg Arg Leu Ser Ala Met Glu
        195                 200                 205

Lys Gly Lys Leu His Lys Pro Gly Lys Asp Ala Ser Lys Arg Gly Arg
    210                 215                 220

Gln Thr Pro Val Leu Tyr Ala Met Leu Asp His Ser Arg Ser Thr Lys
225                 230                 235                 240

Ala Val Ser Glu Lys Lys Ala Lys Gly Leu Gly Glu Ser Arg Lys Asp
                245                 250                 255

Lys Lys
```

<210> 54
<211> 248
<212> PRT
<213> Homo sapiens

<400> 54

```
Met Ala Pro Gly Ala Pro Ser Ser Ser Pro Ser Pro Ile Leu Ala Val
  1               5                  10                  15

Leu Leu Phe Ser Ser Leu Val Leu Ser Pro Ala Gln Ala Ile Val Val
            20                  25                  30

Tyr Thr Asp Arg Glu Val His Gly Ala Val Gly Ser Arg Val Thr Leu
        35                  40                  45

His Cys Ser Phe Trp Ser Ser Glu Trp Val Ser Asp Asp Ile Ser Phe
    50                  55                  60

Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile Ser Ile Phe
```

```
65                  70                  75                  80

His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly Thr Phe Lys
                85                  90                  95

Glu Arg Ile Gln Trp Val Gly Asp Pro Arg Trp Lys Asp Gly Ser Ile
            100                 105                 110

Val Ile His Asn Leu Asp Tyr Ser Asp Asn Gly Thr Phe Thr Cys Asp
        115                 120                 125

Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln Val Thr Leu
    130                 135                 140

Tyr Val Phe Glu Lys Val Pro Thr Arg Tyr Gly Val Val Leu Gly Ala
145                 150                 155                 160

Val Ile Gly Gly Val Leu Gly Val Val Leu Leu Leu Leu Leu Leu Phe
                165                 170                 175

Tyr Val Val Arg Tyr Cys Trp Leu Arg Arg Gln Ala Ala Leu Gln Arg
            180                 185                 190

Arg Leu Ser Ala Met Glu Lys Gly Lys Leu His Lys Pro Gly Lys Asp
        195                 200                 205

Ala Ser Lys Arg Gly Arg Gln Thr Pro Val Leu Tyr Ala Met Leu Asp
    210                 215                 220

His Ser Arg Ser Thr Lys Ala Val Ser Glu Lys Lys Ala Lys Gly Leu
225                 230                 235                 240

Gly Glu Ser Arg Lys Asp Lys Lys
                245
```

<210> 55
<211> 2327
<212> PRT
<213> Xenopus laevis

<400> 55

```
Met Asn Thr Leu Leu Trp Thr Ile Leu Leu Pro Leu Leu Phe Ser Phe
  1               5                  10                  15

Cys Val Cys Gln Gln Pro Glu His Gln Asp Leu Glu Met Ser Val Gln
             20                  25                  30

Tyr Tyr Asp Asp Asn Val Ile Asp Leu Leu Glu Ala Leu Asn Val Thr
         35                  40                  45

Arg Ser Val Lys Gly Val Thr Lys Ala Lys Gly Ser Asp Pro Ala Ser
     50                  55                  60

Pro Ala Trp Lys Phe Arg Gln Arg Val Pro His Leu Thr Leu Pro Arg
 65                  70                  75                  80
```

```
Asp Tyr Ser Val Tyr Leu Leu Ser Thr Thr Gln Glu Ser Leu Gly Leu
                 85                  90                  95

His Phe Val Ala Lys Gln Ala Lys Asn Asn Arg Gly Thr Leu Val Ala
            100                 105                 110

Phe Leu Ser Pro Ala Ala Thr Lys Ile Asp Gly Arg Pro Leu Leu Arg
        115                 120                 125

Leu Ile Ser Asp Thr His Thr Asp Gln Leu Tyr Phe Glu Tyr Arg Thr
    130                 135                 140

Ala Gln Thr Met Glu Pro Ala Ser Leu His Phe Pro Gly Ser Ser Pro
145                 150                 155                 160

Phe Ser Gly Ser Gln Trp Ala Arg Val Ala Leu Asn Val Asn Thr His
                165                 170                 175

Lys Val Thr Leu Phe Leu Asp Cys Glu Glu Pro Val Val Phe Gly Lys
            180                 185                 190

Glu Gly Ala Glu Glu Met Leu Ser Leu Ile Leu Pro Leu Asp Leu Glu
        195                 200                 205

Ile Thr Phe Ala Ser Thr Pro Ser Asp Lys Glu Ser Lys Phe Leu Gly
    210                 215                 220

Tyr Trp Gln Thr Ala Glu Ile Ser Pro Thr Gly Phe Thr Arg Arg Pro
225                 230                 235                 240

Trp His Cys Glu Asn Arg Ser Asp Ser Leu Pro Leu Pro Tyr Ser Leu
                245                 250                 255

Ser Gly Glu Arg Gln Met Glu Asp Glu Glu Ile Gln Arg Glu Pro Arg
            260                 265                 270

Ala Pro Asp Leu Ser Asp Thr Asp His Tyr Gln Gln Gln Gln Ser Glu
        275                 280                 285

Val Pro Ala Gln Leu Leu Ala Lys Asp Asp Arg Leu Gln Arg Leu Glu
    290                 295                 300

Glu Ala Val Lys Gly Leu Thr Asn Met Ile Asp Met Ile Lys Ser Gln
305                 310                 315                 320

Asn Ala Asp Leu Gln Ala Arg Val Ile Ala Leu Glu Ser Cys Glu Cys
                325                 330                 335

Arg Arg Ser Thr Cys Val Trp Glu Asp Lys Glu Tyr Gln Asp Ser Glu
            340                 345                 350

Thr Trp Lys Lys Asp Ala Cys Asn Ile Cys Val Cys Val Gly Gly Ser
        355                 360                 365

Val Thr Cys Ser Val Arg Lys Asp Trp Pro Gln Cys Leu Gly Cys Phe
    370                 375                 380
```

```
His Glu Gly Arg Asn Tyr Asn Asn Lys Asp Ile Phe Ser Val Gly Pro
385                 390                 395                 400

Cys Met Ser Cys Ile Cys Gln Ser Gly Glu Val Ser Cys Thr Pro Lys
                405                 410                 415

Leu Cys Pro Pro Val Thr Cys Ser Asp Pro Val Thr Leu Pro Asn Glu
            420                 425                 430

Cys Cys Pro Leu Cys Ala Thr Gly Cys Ser Asp Gly His Lys Glu Gly
        435                 440                 445

Asp Thr Trp Arg Lys Asp Thr Cys Thr Thr Cys Thr Cys Gln Asn Gly
    450                 455                 460

Thr Ile Ser Cys Glu Arg Glu Gln Cys Pro Glu Leu Thr Cys Leu Lys
465                 470                 475                 480

Arg His Thr Pro Pro Gly Gln Cys Cys Ala Lys Cys Gln Gln Gly Cys
                485                 490                 495

Glu Tyr Glu Gly Leu Ile Tyr Arg Asn Gly Asp Tyr Phe Leu Ser Gln
            500                 505                 510

Ser Asn Pro Cys Val Asn Cys Ser Cys Leu Asn Asn Leu Val Arg Cys
        515                 520                 525

Leu Pro Val Gln Cys Pro Leu Pro Ala Cys Thr Asn Pro Val Pro Ile
    530                 535                 540

Pro Gly Gln Cys Cys Pro Ser Cys Pro Val Cys Glu Leu Asp Gly His
545                 550                 555                 560

Pro Leu Ile Pro Gly Gln Asn Val Thr Thr Lys Asp Gly Cys Arg Leu
                565                 570                 575

Cys Ser Cys Gln Asp Gly Lys Val Gln Cys Thr Glu Ser Val Gln Cys
            580                 585                 590

Pro His Ile Cys Thr His Gly Val Arg Ser Asn Ser Cys Cys Leu Asp
        595                 600                 605

Cys Ser Ala Cys Glu Met His Gly Asp Ile Ile Pro Asn Gly Leu Thr
    610                 615                 620

Phe Gln Gly Asn Met Asp Pro Cys Glu Ser Cys Thr Cys Gln Asp Gly
625                 630                 635                 640

Asn Val His Cys Val Arg Val Ser Cys Pro Glu Leu Ser Cys Val Leu
                645                 650                 655

His Glu Lys Ile Pro Gly Glu Cys Cys Ser Gln Cys Gln Ser Cys Met
            660                 665                 670

Asp Gly Thr Val Lys Arg Lys His Gly Glu Glu Trp Lys Pro Gln Gly
        675                 680                 685
```

```
Asp Pro Cys Gln Ser Cys Arg Cys Leu Glu Gly Arg Val Gln Cys Arg
    690                 695                 700

Lys Arg His Cys Ala Ala Leu Cys Arg Asn Pro Leu Pro Pro Arg Pro
705                 710                 715                 720

Gly Thr Cys Cys Pro Met Cys Asp Gly Cys Leu Tyr Asn Gly Arg Ser
                725                 730                 735

Tyr Leu Asn Gly Gln Pro Val Arg Ser Thr Asp Gln Cys Asn Arg Cys
            740                 745                 750

Phe Cys Glu Asn Gly Asn Val Gln Cys Glu Pro Ile Ala Cys Pro Gln
        755                 760                 765

Ala Pro Cys Arg Asn Pro Val Arg Arg Thr Gly Glu Cys Cys Pro Arg
    770                 775                 780

Cys Glu Gly Cys Glu Tyr Asp Ser Arg His Phe Ala Glu Gly Val Val
785                 790                 795                 800

Phe Thr Thr Ala His Asp Pro Cys Leu Gln Cys Thr Cys Leu Ser Gly
                805                 810                 815

Glu Val Ser Cys Glu His Leu Asp Arg Lys Cys Pro Pro Ser Gln Cys
            820                 825                 830

Ser His Pro Gly Lys Ala Ala Gly Gln Cys Cys Pro Ser Cys Asp Val
        835                 840                 845

Cys Asp Phe Glu Gly Ile Leu Tyr Thr Asp Arg Gln Thr Phe Gln Pro
    850                 855                 860

Pro Gly His Gly Pro Cys Leu Lys Cys Phe Cys Thr Ile Gly Asn Val
865                 870                 875                 880

Arg Cys Val Glu Glu Thr Cys Pro Pro Ala Pro Cys Pro Asn Pro Val
                885                 890                 895

Arg Asp Pro Glu Gln Cys Cys Pro Val Cys Lys Val Cys Val Gln Asp
            900                 905                 910

Gly Val Glu Phe Leu Glu Gly Ile Glu Trp Glu Leu Asp Gly Asn Pro
        915                 920                 925

Cys Ser Ser Cys Thr Cys Arg Asn Gly Asp Thr Val Cys Gly Val Ser
    930                 935                 940

Glu Cys Pro Pro Val Ser Cys Leu His Pro Thr Arg Arg Glu Gly Glu
945                 950                 955                 960

Cys Cys Pro Val Cys Asp Ser Cys Ser Tyr Asn Gln Arg Leu Tyr Ser
                965                 970                 975

Asn Glu Gln Ile Phe Thr Asp Pro Asp Asn Pro Cys Gln Asp Cys Gln
            980                 985                 990
```

```
Cys Lys Asp Gly Thr Val Gln Cys Ser Ser Ile Val Cys Pro Pro Val
        995                1000                1005

Leu Cys Thr Ile Pro Glu Arg Thr Pro Gly Gln Cys Cys Ala Lys Cys
   1010                1015                1020

Pro Asp Cys Arg Tyr Gln Asp Gln Ile Phe Leu Glu Gly Glu Gln Phe
1025                1030                1035                1040

Ser Asn Pro Leu Asn Gln Cys Gln Glu Cys Trp Cys Arg Asp Gly His
                1045                1050                1055

Val Thr Cys Thr Asp Arg Gly Cys Thr Gly Ala Leu Cys Ser Tyr Pro
            1060                1065                1070

Leu Pro Gly Thr Cys Cys Gln Asn Asn Cys Asn Gly Cys Asn Tyr Ala
        1075                1080                1085

Gly Lys Glu Tyr Pro Asn Gly Ala Asp Phe Pro His Pro Thr Asp Lys
   1090                1095                1100

Cys Arg Gln Cys His Cys Ile Asn Gly Asn Val Gln Cys Leu Ala Gln
1105                1110                1115                1120

Arg Cys Pro Pro Leu Leu Cys Ala Glu Pro Phe Pro Val Pro Gly Glu
                1125                1130                1135

Cys Cys Pro Gln Cys Pro Val Pro Pro Ala Asp Cys Pro Tyr Ser Gly
            1140                1145                1150

Val Thr Tyr Arg His Met Gln Arg Phe Tyr Asp Pro Ser Asp Lys Cys
        1155                1160                1165

Arg Asp Cys Ile Cys Asn Asn Gly Thr Val Thr Cys Gln Arg Lys Pro
   1170                1175                1180

Cys Ala Pro Thr Pro Cys Leu His Pro Leu Gln Gly Asp Cys Cys Arg
1185                1190                1195                1200

Ser Cys Asp Gly Cys Leu Met Ser Gly Lys Glu Leu Ala Asn Gly Glu
                1205                1210                1215

Gln Phe Pro Gln Pro Ser Asp Pro Cys Ser Val Cys Val Cys Trp Glu
            1220                1225                1230

Gly Ser Val Thr Cys Gln Pro Lys Thr Cys Pro Val Leu Asn Cys Pro
        1235                1240                1245

Phe Pro Ala Pro Gly Gln Cys Cys Lys Glu Cys Gln Asp Cys Gln Tyr
   1250                1255                1260

Phe Gly Glu Val Tyr Leu Asn Gly Gln Glu Phe Ser Ala Pro Glu Asp
1265                1270                1275                1280

Ser Cys Ser Arg Cys Val Cys Ala Asp Gly Phe Val Thr Cys Ser Lys
                1285                1290                1295
```

Lys Pro Cys Tyr Lys Ala Gly Cys Thr His Pro Ser Thr Pro Pro Gly
1300 1305 1310

Lys Cys Cys Pro Val Cys Asp Gly Cys Ser Tyr Asn Gly Asp Ala Leu
1315 1320 1325

Ile Asn Ser Gln Ser Val Pro Asp Pro Ser Asn Pro Leu Cys Ser Glu
1330 1335 1340

Cys Thr Cys Arg Ala Gly Ser Val Gln Cys Val Arg Lys Leu Cys Gly
1345 1350 1355 1360

Pro Thr Ser Cys Pro His Pro Val Thr Gly Pro Cys Asp Cys Pro Ile
1365 1370 1375

Cys Gln Gly Cys His Phe Gln Gly His Asn Tyr Ile Asp Gly Glu Val
1380 1385 1390

Phe Thr Ser Ala Gln Ser Gln Cys Glu Gln Cys Arg Cys Met Arg Gly
1395 1400 1405

His Val Thr Cys Gly Pro Arg Pro Cys Asp Gln Val Thr Cys Pro His
1410 1415 1420

Pro Ala Glu Asp Pro Cys Met Cys Pro Val Cys Asp Gly Cys Asn Tyr
1425 1430 1435 1440

Ser Gly Arg Asp Cys Thr Asn Gly Glu Ser Phe Pro Asp Pro Glu Asp
1445 1450 1455

Glu Cys Ser His Cys Thr Cys Arg Asn Gly Glu Val Ala Cys Ile Ser
1460 1465 1470

Val Pro Cys Pro Arg Val Ser Cys Met Tyr Pro Ile Thr Pro Arg Gly
1475 1480 1485

Glu Cys Cys Pro Arg Cys Thr Gly Ile Cys Lys His Asn Gly Arg Val
1490 1495 1500

Tyr Gln Ser Gly Asp Thr Phe His Pro Pro Gly Asp Leu Cys Thr Lys
1505 1510 1515 1520

Cys Ser Cys Gln Asn Glu Met Val Asn Cys Gln Arg Val Arg Cys Ser
1525 1530 1535

Gln Glu Cys Ser His Pro Val Leu Ser Pro Ala Ser Ser Cys Cys Pro
1540 1545 1550

Val Cys Asp Arg Cys Phe Tyr Glu Asn Arg Glu Tyr Ala Asn His Glu
1555 1560 1565

Thr Phe Thr Ser Thr Ser Asp Pro Cys Gln Arg Cys Val Cys Leu Asp
1570 1575 1580

Gly Ser Val Thr Cys Thr His Val Val Cys Pro Tyr Val Ser Cys Ala
1585 1590 1595 1600

Asn Pro Ile Thr Lys Pro Gly Gln Cys Cys Arg Glu Cys Pro Val Cys
1605 1610 1615

Arg Tyr Gln Gly Lys Glu Phe Ser Glu Gly Ala His Trp Val Pro His
1620 1625 1630

Thr Asp Pro Cys Leu Lys Cys Thr Cys Ser Asn Gly His Val Asp Cys
1635 1640 1645

Glu Pro Pro Gln Cys Pro Pro Leu Pro Cys Thr Gln Gln Val Thr Asp
1650 1655 1660

Pro Gly Thr Cys Cys Pro Arg Cys Arg Gly Cys Val Tyr Asn Gly Arg
1665 1670 1675 1680

Glu Tyr Arg Asp Asn Ser Asn Trp Leu Ser Ser Ser Asp His Cys Met
1685 1690 1695

Ser Cys Met Cys Val Asp Gly Val Thr Thr Cys Ser Lys Leu Gln Cys
1700 1705 1710

Ile Thr Ser Cys Thr Asn Gln Ile Thr Ile Pro Gly Glu Cys Cys Pro
1715 1720 1725

Val Cys Ala Asp Cys Ile Ser Asn Ser Lys Val Tyr Leu Pro Gly Asp
1730 1735 1740

Ser Tyr Asn Pro Ser Lys Asp Pro Cys Glu Ile Cys Thr Cys Glu Ser
1745 1750 1755 1760

Leu Pro Asn Gly Gln Gln Tyr Arg His Cys Thr Lys Lys Gln Cys Pro
1765 1770 1775

Ser Leu Leu Asp Cys Pro Arg Ser Tyr Ile Leu Pro Pro Ala Glu Gly
1780 1785 1790

Gln Cys Cys Ser Ser Cys Ala Gln Ala Leu Ser Asn Cys Thr Asn Thr
1795 1800 1805

Leu Val Gly Asn Glu Ile Gln Ala Thr Asp Asp Pro Cys Tyr Thr Cys
1810 1815 1820

His Cys Lys Asp Leu Thr Trp Val Cys Val His Gln Pro Cys Pro Ala
1825 1830 1835 1840

Leu Ser Cys Pro Arg Ser Glu Gln Phe Thr His Ser Gly Ser Cys Cys
1845 1850 1855

Pro Val Cys Asn Glu Cys Val Val Glu Ile Glu Gly Arg Arg Val Pro
1860 1865 1870

Asp Gly Glu Thr Trp Thr Asp Arg Gln Asp Pro Cys Val Thr Cys Thr
1875 1880 1885

Cys Thr Leu Gly His Val Glu Cys Gln Ile Glu Glu Cys Gln Pro Val
1890 1895 1900

Gln Cys Gln Glu Gly Glu Arg Lys Val Lys Arg Pro Gly Thr Cys Cys
1905 1910 1915 1920

His Glu Cys Gln Ala Ser Ala Val Ser Cys Trp Tyr Gln Gly Gln Arg
1925 1930 1935

Phe Leu Ser Asn Glu His Trp Gln Val Asp Glu Cys Thr Ala Cys Thr
1940 1945 1950

Cys Val Ser Gly Glu Val His Cys His Ser Glu Arg Cys Pro Gln Val
1955 1960 1965

Ser Cys Thr Ala Glu Glu Thr Pro Ala Leu Ile Pro Gly Met Cys Cys
1970 1975 1980

Pro His Cys Ile Pro Arg Pro Ala Thr Cys Ile Ala Phe Gly Asp Pro
1985 1990 1995 2000

His Tyr Arg Thr Phe Asp Gly Lys Met Tyr His Phe Gln Gly Ser Cys
2005 2010 2015

Thr Tyr Val Leu Ser Glu Asp Cys Glu Gly Gly Asp Phe Ser Ile His
2020 2025 2030

Val Thr Asn Asp Asp Arg Gly Leu Arg Gly Val Ser Trp Thr Lys Glu
2035 2040 2045

Val Thr Val Leu Ile Gly Asp Ala Val Val Gln Leu Leu Gln Asp Trp
2050 2055 2060

Val Val Met Val Asp Tyr Gln Thr Val Glu Leu Pro Phe Leu Lys Glu
2065 2070 2075 2080

Pro Tyr Ile Tyr Ile Glu Arg Lys Thr Asn Thr Ile Leu Leu Asn Ser
2085 2090 2095

Asn Ile Gly Val Lys Val Gln Trp Asn Gly Arg Ser His Leu Glu Val
2100 2105 2110

Ser Val Pro Gly Thr Tyr Arg Asp His Leu Cys Gly Leu Cys Gly Asn
2115 2120 2125

Phe Asn Asn Tyr Pro Gln Asp Asp Leu Arg Asp Arg Arg Gly Gln Ile
2130 2135 2140

Leu Met Ser Glu Ala Ala Phe Gly Asn Ser Trp Arg Val Gln Ser Ser
2145 2150 2155 2160

Asn Asp Ser Ser Ser Ser Cys Trp Asp Gly Gln Asp Val Asp Pro Cys
2165 2170 2175

Lys Gln Ala Gly Tyr Arg Ala Arg Lys Glu Ala Asn Gly Arg Cys Lys
2180 2185 2190

Leu Leu Lys Ser Ser Val Phe Glu Pro Cys His Arg Val Val Pro Pro
2195 2200 2205

```
Glu Met Phe Phe Ala Ser Cys Val Tyr Asp Leu Cys Ala Cys Gly Ala
   2210                2215                2220

Gly Asp Glu Cys Leu Cys Asp Val Leu Glu Ala Tyr Ala Ser Glu Cys
2225                2230                2235                2240

Arg Glu Ala Gly Val Ile Leu Gln Trp Arg Ser Pro Ala Leu Cys Ala
               2245                2250                2255

Val Gly Cys Pro His Asp Arg Gly Tyr Val Phe Asp Glu Cys Gly Pro
           2260                2265                2270

Pro Cys Pro Lys Thr Cys Phe Asn Lys Asp Val Pro Leu Gly Val Leu
       2275                2280                2285

Glu Ser His Cys Phe Lys Pro Cys Val Pro Gly Cys Gln Cys Pro Ala
   2290                2295                2300

Gly Leu Val Glu His Glu Ser His Cys Ile Pro Pro Glu Ser Cys Pro
2305                2310                2315                2320

Lys Ile Ile His Gly Asn Leu
               2325
```

<210> 56
<211> 751
<212> PRT
<213> Drosophila melanogaster

<400> 56

```
Met Cys Cys Gln Ser Ser Gly Gln Trp Lys Phe Pro Ala Gln Gln Pro
  1               5                  10                  15

Arg Lys Ser Leu Ala Ser Arg Arg Arg His Thr Gly Phe Arg Pro Ser
             20                  25                  30

Thr Gln Leu Leu Ile Leu Ile Ala Val Leu Leu Ala Leu Leu Gln Gly
         35                  40                  45

Arg Thr Val Asp Ala Gly Ala Gly Asp Ser Leu Ser Gly Val Arg Gln
     50                  55                  60

Ser Cys Ser Asn Glu Gly Glu Glu Val Gln Leu Lys Asn Gln Pro Gln
 65                  70                  75                  80

Ile Phe Thr Cys Phe Lys Cys Glu Cys Gln Asn Gly Phe Val Asn Cys
                 85                  90                  95

Arg Asp Thr Cys Pro Pro Val Asn Asp Cys Tyr Ile Leu Asp Lys Ser
            100                 105                 110

Asn Gly Thr Cys Cys Arg Arg Cys Lys Gly Cys Ser Phe Arg Gly Met
        115                 120                 125

Ser Tyr Glu Ser Gly Ser Glu Trp Asn Asp Pro Glu Asp Pro Cys Lys
    130                 135                 140
```

```
Thr Tyr Lys Cys Val Ala Thr Val Val Thr Glu Thr Ile Gln Lys Cys
145                 150                 155                 160

Tyr Ser Gln Cys Asp Asn Asn Gln Leu Gln Pro Pro Arg Pro Gly Glu
                165                 170                 175

Cys Cys Pro Thr Cys Gln Gly Cys Lys Ile Asn Gly Gln Thr Val Ala
            180                 185                 190

Glu Gly His Glu Val Asp Ala Ser Ile Asp Asp Arg Cys Leu Val Cys
        195                 200                 205

Gln Cys Arg Gly Thr Gln Leu Thr Cys Ser Lys Lys Thr Cys Pro Val
    210                 215                 220

Leu Pro Cys Pro Met Ser Lys Gln Ile Lys Arg Pro Asp Glu Cys Cys
225                 230                 235                 240

Pro Arg Cys Pro Gln Asn His Ser Phe Leu Pro Val Pro Gly Lys Cys
                245                 250                 255

Leu Phe Asn Lys Ser Val Tyr Pro Glu Lys Thr Gln Phe Met Pro Asp
            260                 265                 270

Arg Cys Thr Asn Cys Thr Cys Leu Asn Gly Thr Ser Val Cys Gln Arg
        275                 280                 285

Pro Thr Cys Pro Ile Leu Glu Cys Ala Pro Glu Phe Gln Glu Pro Asp
    290                 295                 300

Gly Cys Cys Pro Arg Cys Ala Val Ala Glu Val Arg Ser Glu Cys Ser
305                 310                 315                 320

Leu Asp Gly Ile Val Tyr Gln Asn Asn Glu Thr Trp Asp Met Gly Pro
                325                 330                 335

Cys Arg Ser Cys Arg Cys Asn Gly Gly Thr Ile Arg Cys Ala Gln Met
            340                 345                 350

Arg Cys Pro Ala Val Lys Cys Arg Ala Asn Glu Glu Leu Lys Gln Pro
        355                 360                 365

Pro Gly Glu Cys Cys Gln Arg Cys Val Glu Thr Ala Gly Thr Cys Thr
    370                 375                 380

Val Phe Gly Asp Pro His Phe Arg Thr Phe Asp Gly Lys Phe Phe Ser
385                 390                 395                 400

Phe Gln Gly Ser Cys Lys Tyr Leu Leu Ala Ser Asp Cys Met Gly Lys
                405                 410                 415

Thr Phe His Ile Arg Leu Thr Asn Glu Gly Arg Gly Thr Arg Arg Ser
            420                 425                 430

Ser Trp Ala Lys Thr Val Thr Leu Ser Leu Arg Asn Leu Lys Val Asn
        435                 440                 445
```

```
Leu Gly Gln Arg Met Arg Val Lys Val Asn Gly Thr Arg Val Thr Leu
    450                 455                 460

Pro Tyr Phe Val Val Ala Gly Gly Gln Asn Val Thr Ile Glu Arg Leu
465                 470                 475                 480

Ala Asp Gly Gly Ala Val Met Leu Arg Ser Glu Met Gly Leu Thr Leu
                485                 490                 495

Glu Trp Asn Gly Ala Gly Phe Leu Gln Val Ser Val Pro Ala Lys Phe
            500                 505                 510

Lys Lys Arg Leu Cys Gly Leu Cys Gly Asn Phe Asn Gly Ser Ser Arg
        515                 520                 525

Asp Asp Leu Thr Gly Lys Asp Gly Arg Ser His Gly Asp Asp Glu Val
    530                 535                 540

Trp His Phe Ala Asn Ser Trp Lys Val Gly Gly Pro Lys Ser Cys Ser
545                 550                 555                 560

Arg Lys Arg Glu Phe Leu Ala Ala Thr Pro Thr Arg Asp Lys Arg Lys
                565                 570                 575

Ser Asn Phe Tyr Cys His Pro Leu Ser Val Pro Ala Leu Phe Gly Glu
            580                 585                 590

Cys Asn Glu Arg Leu Asn Pro Glu Asn Tyr Lys Ala Ala Cys Arg Met
        595                 600                 605

Asp Val Cys Glu Cys Pro Ser Gly Asp Cys His Cys Asp Ser Phe Ala
    610                 615                 620

Ala Tyr Ala His Glu Cys Arg Arg Leu Gly Val Gln Leu Pro Asp Trp
625                 630                 635                 640

Arg Ser Ala Thr Asn Cys Pro Ala Gly Trp Arg Arg Asn Ala Thr Leu
                645                 650                 655

Ser Ser Phe Lys Gly Asn Gln Phe Tyr Gly Asp Pro Ser Phe Ser Arg
            660                 665                 670

Met Lys Gly Arg Arg Gln Lys Asn His Gln Leu Arg Leu Gln Leu Gln
        675                 680                 685

Gln Glu Gln Gln Gln Arg Ser Lys Gln Gly Gln Lys Gly Arg His Lys
    690                 695                 700

Pro Gly Gly His Asn Gln Leu Asp Arg Gln Gly His Asn Gly Leu Asp
705                 710                 715                 720

Lys Asp Gln Leu Gln Lys Glu Phe Ile Leu Lys His Val Pro Ser Ser
                725                 730                 735

Phe Leu Tyr Pro Arg Ala Pro Asp Arg Thr Pro Pro Pro Leu His
            740                 745                 750
```

<210> 57
<211> 665
<212> PRT
<213> Drosophila melanogaster

<400> 57
Met Arg Ala Lys Asn Gly Phe Val Asn Cys Arg Asp Thr Cys Pro Pro
1 5 10 15

Val Asn Asp Cys Tyr Ile Leu Asp Lys Ser Asn Gly Thr Cys Cys Arg
20 25 30

Arg Cys Lys Gly Cys Ser Phe Arg Gly Met Ser Tyr Glu Ser Gly Ser
35 40 45

Glu Trp Asn Asp Pro Glu Asp Pro Cys Lys Thr Tyr Lys Cys Val Ala
50 55 60

Thr Val Val Thr Glu Thr Ile Gln Lys Cys Tyr Ser Gln Cys Asp Asn
65 70 75 80

Asn Gln Leu Gln Pro Pro Arg Pro Gly Glu Cys Cys Pro Thr Cys Gln
85 90 95

Gly Cys Lys Ile Asn Gly Gln Thr Val Ala Glu Gly His Glu Val Asp
100 105 110

Ala Ser Ile Asp Asp Arg Cys Leu Val Cys Gln Cys Arg Gly Thr Gln
115 120 125

Leu Thr Cys Ser Lys Lys Thr Cys Pro Val Leu Pro Cys Pro Met Ser
130 135 140

Lys Gln Ile Lys Arg Pro Asp Glu Cys Cys Pro Arg Cys Pro Gln Asn
145 150 155 160

His Ser Phe Leu Pro Val Pro Gly Lys Cys Leu Phe Asn Lys Ser Val
165 170 175

Tyr Pro Glu Lys Thr Gln Phe Met Pro Asp Arg Cys Thr Asn Cys Thr
180 185 190

Cys Leu Asn Gly Thr Ser Val Cys Gln Arg Pro Thr Cys Pro Ile Leu
195 200 205

Glu Cys Ala Pro Glu Phe Gln Glu Pro Asp Gly Cys Cys Pro Arg Cys
210 215 220

Ala Val Ala Glu Val Arg Ser Glu Cys Ser Leu Asp Gly Ile Val Tyr
225 230 235 240

Gln Asn Asn Glu Thr Trp Asp Met Gly Pro Cys Arg Ser Cys Arg Cys
245 250 255

Asn Gly Gly Thr Ile Arg Cys Ala Gln Met Arg Cys Pro Ala Val Lys

```
            260                 265                 270

Cys Arg Ala Asn Glu Glu Leu Lys Gln Pro Pro Gly Glu Cys Cys Gln
        275                 280                 285

Arg Cys Val Glu Thr Ala Gly Thr Cys Thr Val Phe Gly Asp Pro His
    290                 295                 300

Phe Arg Thr Phe Asp Gly Lys Phe Phe Ser Phe Gln Gly Ser Cys Lys
305                 310                 315                 320

Tyr Leu Leu Ala Ser Asp Cys Met Gly Lys Thr Phe His Ile Arg Leu
                325                 330                 335

Thr Asn Glu Gly Arg Gly Thr Arg Arg Ala Ser Trp Ala Lys Thr Val
            340                 345                 350

Thr Leu Ser Leu Arg Asn Leu Lys Val Asn Leu Gly Gln Arg Met Arg
        355                 360                 365

Val Lys Val Asn Gly Thr Arg Val Thr Leu Pro Tyr Phe Val Val Ala
    370                 375                 380

Gly Gly Gln Asn Val Thr Ile Glu Arg Leu Ala Asn Gly Gly Ala Val
385                 390                 395                 400

Met Leu Arg Ser Glu Met Gly Leu Thr Leu Glu Trp Asn Gly Ala Gly
                405                 410                 415

Phe Leu Gln Val Ser Val Pro Ala Lys Phe Lys Lys Arg Leu Cys Gly
            420                 425                 430

Leu Cys Gly Asn Phe Asn Gly Ser Ser Arg Asp Asp Leu Thr Gly Lys
        435                 440                 445

Asp Gly Arg Ser His Gly Asp Asp Glu Val Trp His Phe Ala Asn Ser
    450                 455                 460

Trp Lys Val Gly Gly Pro Lys Ser Cys Ser Arg Lys Arg Glu Phe Leu
465                 470                 475                 480

Ala Ala Thr Pro Thr Cys Asp Lys Arg Lys Ser Asn Phe Tyr Cys His
                485                 490                 495

Pro Leu Ser Val Pro Ala Leu Phe Gly Glu Cys Asn Glu Arg Leu Asn
            500                 505                 510

Pro Glu Asn Tyr Lys Ala Ala Cys Arg Met Asp Val Cys Glu Cys Pro
        515                 520                 525

Ser Gly Asp Cys His Cys Asp Ser Phe Ala Ala Tyr Ala His Glu Cys
    530                 535                 540

Arg Arg Leu Gly Val Gln Leu Pro Asp Trp Arg Ser Ala Thr Asn Cys
545                 550                 555                 560

Pro Ala Gly Trp Arg Arg Asn Ala Thr Leu Ser Ser Phe Lys Gly Asn
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565 570 575

Gln Phe Tyr Gly Asp Pro Ser Phe Ser Arg Met Lys Gly Arg Arg Gln
580 585 590

Lys Asn His Gln Leu Arg Leu Gln Leu Gln Gln Glu Gln Gln Gln Arg
595 600 605

Ser Lys Gln Gly Gln Lys Gly Arg His Lys Pro Gly Gly His Asn Gln
610 615 620

Leu Asp Arg Gln Gly His Asn Gly Leu Asp Lys Asp Gln Leu Gln Lys
625 630 635 640

Glu Phe Ile Leu Lys His Val Pro Ser Ser Phe Leu Tyr Pro Arg Ala
645 650 655

Pro Asp Arg Thr Pro Pro Pro Leu His
660 665

<210> 58
<211> 462
<212> PRT
<213> Mus musculus

<400> 58
Met Phe Gly Ser Glu Lys Ser Ile Arg Pro Ser Leu Gly Ser Cys Leu
1 5 10 15

Phe Arg Ser Asp Val Tyr Asp Asn Gly Ala Ser Phe Val Tyr Asp Asn
20 25 30

Cys Thr Val Cys Thr Cys Lys Asp Ser Thr Met Val Cys Lys Lys Lys
35 40 45

Cys Ser His Pro Gly Val Cys Asn Ser Asp Glu Asp Ala Cys Cys Glu
50 55 60

Asp Cys Leu Leu Arg Val Pro Pro Glu Asp Ile Lys Val Cys Lys Phe
65 70 75 80

Gly Ser Lys Ile Phe Arg Asp Gly Glu Met Trp Ser Ser Val Asn Cys
85 90 95

Ser Ile Cys Ala Cys Val Lys Gly Lys Thr Glu Cys Arg Lys Lys Gln
100 105 110

Cys Val Pro Val Ser Ser Cys Pro Gln Gly Lys Ile Leu Asn Arg Lys
115 120 125

Gly Cys Cys Pro Ile Cys Thr Glu Lys Pro Gly Val Cys Thr Val Phe
130 135 140

Gly Asp Pro His Tyr Asn Thr Phe Asp Gly Arg Thr Phe Asn Phe Gln
145 150 155 160

Gly Thr Cys Gln Tyr Val Leu Thr Lys Asp Cys Ser Ser Pro Ala Ser
165 170 175

Pro Phe Gln Val Leu Val Lys Asn Asp Ala Arg Arg Thr Arg Ser Phe
180 185 190

Ser Trp Thr Lys Ser Val Glu Leu Met Leu Gly Glu Ser Thr Val Ser
195 200 205

Leu Gln Gln His Leu Thr Val Arg Trp Asn Gly Ser Arg Ile Ala Leu
210 215 220

Pro Cys His Thr Pro His Phe His Ile Asp Leu Asp Gly Tyr Leu Leu
225 230 235 240

Lys Val Thr Thr Arg Ala Gly Leu Glu Ile Ser Trp Asp Gly Asp Ser
245 250 255

Phe Val Glu Val Met Ala Ala Pro His Leu Lys Gly Lys Leu Cys Gly
260 265 270

Leu Cys Gly Asn Tyr Asn Gly His Lys Arg Asp Asp Leu Ile Gly Gly
275 280 285

Asp Gly Asn Phe Lys Phe Asp Val Asp Asp Phe Ala Glu Ser Trp Arg
290 295 300

Val Glu Ser Asn Glu Phe Cys Asn Arg Pro Gln Arg Lys Pro Val Pro
305 310 315 320

Glu Leu Cys Gln Gly Thr Val Lys Val Lys Leu Arg Ala His Arg Glu
325 330 335

Cys Gln Lys Leu Lys Ser Trp Glu Phe Gln Thr Cys His Ser Thr Val
340 345 350

Asp Tyr Thr Thr Phe Tyr Arg Ser Cys Val Thr Asp Met Cys Glu Cys
355 360 365

Pro Val His Lys Asn Cys Tyr Cys Glu Ser Phe Leu Ala Tyr Thr Arg
370 375 380

Ala Cys Gln Arg Glu Gly Ile Lys Val His Trp Glu Pro Gln Gln Ser
385 390 395 400

Cys Ala Ala Thr Gln Cys Lys His Gly Ala Val Tyr Asp Thr Cys Gly
405 410 415

Pro Gly Cys Val Lys Thr Cys Asp Asn Trp Asn Glu Ile Gly Pro Cys
420 425 430

Asn Lys Pro Cys Ile Ala Gly Cys His Cys Pro Ala Asn Leu Val Leu
435 440 445

His Lys Gly Arg Cys Ile Lys Pro Val Leu Cys Pro Gln Arg
450 455 460

<210> 59
<211> 2601
<212> PRT
<213> Homo sapiens

<400> 59
Met Val Pro Pro Val Trp Thr Leu Leu Leu Leu Val Gly Ala Ala Leu
1 5 10 15

Phe Arg Lys Glu Lys Pro Pro Asp Gln Lys Leu Val Val Arg Ser Ser
20 25 30

Arg Asp Asn Tyr Val Leu Thr Gln Cys Asp Phe Glu Asp Asp Ala Lys
35 40 45

Pro Leu Cys Asp Trp Ser Gln Val Ser Ala Asp Asp Glu Asp Trp Val
50 55 60

Arg Ala Ser Gly Pro Ser Pro Thr Gly Ser Thr Gly Ala Pro Gly Gly
65 70 75 80

Tyr Pro Asn Gly Glu Gly Ser Tyr Leu His Met Glu Ser Asn Ser Phe
85 90 95

His Arg Gly Gly Val Ala Arg Leu Leu Ser Pro Asp Leu Trp Glu Gln
100 105 110

Gly Pro Leu Cys Val His Phe Ala His His Met Phe Gly Leu Ser Trp
115 120 125

Gly Ala Gln Leu Arg Leu Leu Leu Leu Ser Gly Glu Glu Gly Arg Arg
130 135 140

Pro Asp Val Leu Trp Lys His Trp Asn Thr Gln Arg Pro Ser Trp Met
145 150 155 160

Leu Thr Thr Val Thr Val Pro Ala Gly Phe Thr Leu Pro Thr Arg Leu
165 170 175

Met Phe Glu Gly Thr Arg Gly Ser Thr Ala Tyr Leu Asp Ile Ala Leu
180 185 190

Asp Ala Leu Ser Ile Arg Arg Gly Ser Cys Asn Arg Val Cys Met Met
195 200 205

Gln Thr Cys Ser Phe Asp Ile Pro Asn Asp Leu Cys Asp Trp Thr Trp
210 215 220

Ile Pro Thr Ala Ser Gly Ala Lys Trp Thr Gln Lys Lys Gly Ser Ser
225 230 235 240

Gly Lys Pro Gly Val Gly Pro Asp Gly Asp Phe Ser Ser Pro Gly Ser
245 250 255

Gly Cys Tyr Met Leu Leu Asp Pro Lys Asn Ala Arg Pro Gly Gln Lys
260 265 270

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Ala Val Leu Leu Ser Pro Val Ser Leu Ser Ser Gly Cys Leu Ser Phe
        275                 280                 285

Ser Phe His Tyr Ile Leu Arg Gly Gln Ser Pro Gly Ala Ala Leu His
    290                 295                 300

Ile Tyr Ala Ser Val Leu Gly Ser Ile Arg Lys His Thr Leu Phe Ser
305                 310                 315                 320

Gly Gln Pro Gly Pro Asn Trp Gln Ala Val Ser Val Asn Tyr Thr Ala
                325                 330                 335

Val Gly Arg Ile Gln Phe Ala Val Val Gly Val Phe Gly Lys Thr Pro
            340                 345                 350

Glu Pro Ala Val Ala Val Asp Ala Thr Ser Ile Ala Pro Cys Gly Glu
        355                 360                 365

Gly Phe Pro Gln Cys Asp Phe Glu Asp Asn Ala His Pro Phe Cys Asp
    370                 375                 380

Trp Val Gln Thr Ser Gly Asp Gly Gly His Trp Ala Leu Gly His Lys
385                 390                 395                 400

Asn Gly Pro Val His Gly Met Gly Pro Ala Gly Gly Phe Pro Asn Ala
                405                 410                 415

Gly Gly His Tyr Ile Tyr Leu Glu Ala Asp Glu Phe Ser Gln Ala Gly
            420                 425                 430

Gln Ser Val Arg Leu Val Ser Arg Pro Phe Cys Ala Pro Gly Asp Ile
        435                 440                 445

Cys Val Glu Phe Ala Tyr His Met Tyr Gly Leu Gly Glu Gly Thr Met
    450                 455                 460

Leu Glu Leu Leu Leu Gly Ser Pro Ala Gly Ser Pro Pro Ile Pro Leu
465                 470                 475                 480

Trp Lys Arg Val Gly Ser Gln Arg Pro Tyr Trp Gln Asn Thr Ser Val
                485                 490                 495

Thr Val Pro Ser Gly His Gln Gln Pro Met Gln Leu Ile Phe Lys Gly
            500                 505                 510

Ile Gln Gly Ser Asn Thr Ala Ser Val Val Ala Met Gly Phe Ile Leu
        515                 520                 525

Ile Asn Pro Gly Thr Cys Pro Val Lys Val Leu Pro Glu Leu Pro Pro
    530                 535                 540

Val Ser Pro Val Ser Ser Thr Gly Pro Ser Glu Thr Thr Gly Leu Thr
545                 550                 555                 560

Glu Asn Pro Thr Ile Ser Thr Lys Lys Pro Thr Val Ser Ile Glu Lys
                565                 570                 575
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Pro Ser Val Thr Thr Glu Lys Pro Thr Val Pro Lys Glu Lys Pro Thr
580 585 590

Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro
595 600 605

Ser Glu Lys Pro Asn Met Pro Ser Glu Lys Pro Thr Ile Pro Ser Glu
610 615 620

Lys Pro Thr Ile Leu Thr Glu Lys Pro Thr Ile Pro Ser Glu Lys Pro
625 630 635 640

Thr Ile Pro Ser Glu Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Val
645 650 655

Pro Thr Glu Glu Pro Thr Thr Pro Thr Glu Glu Thr Thr Thr Ser Met
660 665 670

Glu Glu Pro Val Ile Pro Thr Glu Lys Pro Ser Ile Pro Thr Glu Lys
675 680 685

Pro Ser Ile Pro Thr Glu Lys Pro Thr Ile Ser Met Glu Glu Thr Ile
690 695 700

Ile Ser Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Pro Thr Ile Pro
705 710 715 720

Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Ser Thr Ile Ser Pro Glu
725 730 735

Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro
740 745 750

Thr Ile Ser Pro Glu Lys Pro Thr Thr Pro Thr Glu Lys Pro Thr Ile
755 760 765

Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr
770 775 780

Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Thr Glu Glu
785 790 795 800

Pro Thr Thr Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Pro Ser
805 810 815

Ile Pro Met Glu Lys Pro Thr Leu Pro Thr Glu Glu Thr Thr Thr Ser
820 825 830

Val Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro Met Glu
835 840 845

Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro
850 855 860

Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu Lys Leu Thr Ile
865 870 875 880

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Pro Thr Glu Lys Pro Thr Ile Pro Ile Glu Glu Thr Thr Ile Ser Thr
                885                 890                 895

Glu Lys Leu Thr Ile Pro Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys
            900                 905                 910

Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr
        915                 920                 925

Ile Pro Thr Glu Glu Thr Thr Ile Ser Thr Glu Lys Leu Thr Ile Pro
    930                 935                 940

Thr Glu Lys Pro Thr Ile Ser Pro Glu Lys Leu Thr Ile Pro Thr Glu
945                 950                 955                 960

Lys Pro Thr Ile Ser Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Leu
                965                 970                 975

Thr Ile Pro Thr Glu Lys Pro Thr Ile Pro Thr Glu Lys Pro Thr Ile
            980                 985                 990

Pro Thr Glu Lys Leu Thr Ala Leu Arg Pro Pro His Pro Ser Pro Thr
        995                1000                1005

Ala Thr Gly Leu Ala Ala Leu Val Met Ser Pro His Ala Pro Ser Thr
   1010                1015                1020

Pro Met Thr Ser Val Ile Leu Gly Thr Thr Thr Thr Ser Arg Ser Ser
1025                1030                1035                1040

Thr Glu Arg Cys Pro Pro Asn Ala Arg Tyr Glu Ser Cys Ala Cys Pro
                1045                1050                1055

Ala Ser Cys Lys Ser Pro Arg Pro Ser Cys Gly Pro Leu Cys Arg Glu
            1060                1065                1070

Gly Cys Val Cys Asn Pro Gly Phe Leu Phe Ser Asp Asn His Cys Ile
        1075                1080                1085

Gln Ala Ser Ser Cys Asn Cys Phe Tyr Asn Asn Asp Tyr Tyr Glu Pro
   1090                1095                1100

Gly Ala Glu Trp Phe Ser Pro Asn Cys Thr Glu His Cys Arg Cys Trp
1105                1110                1115                1120

Pro Gly Ser Arg Val Glu Cys Gln Ile Ser Gln Cys Gly Thr His Thr
                1125                1130                1135

Val Cys Gln Leu Lys Asn Gly Gln Tyr Gly Cys His Pro Tyr Ala Gly
            1140                1145                1150

Thr Ala Thr Cys Leu Val Tyr Gly Asp Pro His Tyr Val Thr Phe Asp
        1155                1160                1165

Gly Arg His Phe Gly Phe Met Gly Lys Cys Thr Tyr Ile Leu Ala Gln
   1170                1175                1180
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Pro Cys Gly Asn Ser Thr Asp Pro Phe Phe Arg Val Thr Ala Lys Asn
1185 1190 1195 1200

Glu Glu Gln Gly Gln Glu Gly Val Ser Cys Leu Ser Lys Val Tyr Val
1205 1210 1215

Thr Leu Pro Glu Ser Thr Val Thr Leu Leu Lys Gly Arg Arg Thr Leu
1220 1225 1230

Val Gly Gly Gln Gln Val Thr Leu Pro Ala Ile Pro Ser Lys Gly Val
1235 1240 1245

Phe Leu Gly Ala Ser Gly Arg Phe Val Glu Leu Gln Thr Glu Phe Gly
1250 1255 1260

Leu Arg Val Arg Trp Asp Gly Asp Gln Gln Leu Tyr Val Thr Val Ser
1265 1270 1275 1280

Ser Thr Tyr Ser Gly Lys Leu Cys Gly Leu Cys Gly Asn Tyr Asp Gly
1285 1290 1295

Asn Ser Asp Asn Asp His Leu Lys Leu Asp Gly Ser Pro Ala Gly Asp
1300 1305 1310

Lys Glu Glu Leu Gly Asn Ser Trp Gln Thr Asp Gln Asp Glu Asp Gln
1315 1320 1325

Glu Cys Gln Lys Tyr Gln Val Val Asn Ser Pro Ser Cys Asp Ser Ser
1330 1335 1340

Leu Gln Ser Ser Met Ser Gly Pro Gly Phe Cys Gly Arg Leu Val Asp
1345 1350 1355 1360

Thr His Gly Pro Phe Glu Thr Cys Leu Leu His Val Lys Ala Ala Ser
1365 1370 1375

Phe Phe Asp Ser Cys Met Leu Asp Met Cys Gly Phe Gln Gly Leu Gln
1380 1385 1390

His Leu Leu Cys Thr His Met Ser Thr Met Thr Thr Thr Cys Gln Asp
1395 1400 1405

Ala Gly His Ala Val Lys Pro Trp Arg Glu Pro His Phe Cys Pro Met
1410 1415 1420

Ala Cys Pro Pro Asn Ser Lys Tyr Ser Leu Cys Ala Lys Pro Cys Pro
1425 1430 1435 1440

Asp Thr Cys His Ser Gly Phe Ser Gly Met Phe Cys Ser Asp Arg Cys
1445 1450 1455

Val Glu Ala Cys Glu Cys Asn Pro Gly Phe Val Leu Ser Gly Leu Glu
1460 1465 1470

Cys Ile Pro Arg Ser Gln Cys Gly Cys Leu His Pro Ala Gly Ser Tyr
1475 1480 1485

Phe Lys Val Gly Glu Arg Trp Tyr Lys Pro Gly Cys Lys Glu Leu Cys
1490 1495 1500

Val Cys Glu Ser Asn Asn Arg Ile Arg Cys Gln Pro Trp Arg Cys Arg
1505 1510 1515 1520

Ala Gln Glu Phe Cys Gly Gln Gln Asp Gly Ile Tyr Gly Cys His Ala
1525 1530 1535

Gln Gly Ala Ala Thr Cys Thr Ala Ser Gly Asp Pro His Tyr Leu Thr
1540 1545 1550

Phe Asp Gly Ala Leu His His Phe Met Gly Thr Cys Thr Tyr Val Leu
1555 1560 1565

Thr Arg Pro Cys Trp Ser Arg Ser Gln Asp Ser Tyr Phe Val Val Ser
1570 1575 1580

Ala Thr Asn Glu Asn Arg Gly Gly Ile Leu Glu Val Ser Tyr Ile Lys
1585 1590 1595 1600

Ala Val His Val Thr Val Phe Asp Leu Ser Ile Ser Leu Leu Arg Gly
1605 1610 1615

Cys Lys Val Met Leu Asn Gly His Arg Val Ala Leu Pro Val Trp Leu
1620 1625 1630

Ala Gln Gly Arg Val Thr Ile Arg Leu Ser Ser Asn Leu Val Leu Leu
1635 1640 1645

Tyr Thr Asn Phe Gly Leu Gln Val Arg Tyr Asp Gly Ser His Leu Val
1650 1655 1660

Glu Val Thr Val Pro Ser Ser Tyr Gly Gly Gln Leu Cys Gly Leu Cys
1665 1670 1675 1680

Gly Asn Tyr Asn Asn Asn Ser Leu Asp Asp Asn Leu Arg Pro Asp Arg
1685 1690 1695

Lys Leu Ala Gly Asp Ser Met Gln Leu Gly Ala Ala Trp Lys Leu Pro
1700 1705 1710

Glu Ser Ser Glu Pro Gly Cys Phe Leu Val Gly Gly Lys Pro Ser Ser
1715 1720 1725

Cys Gln Glu Asn Ser Met Ala Asp Ala Trp Asn Lys Asn Cys Ala Ile
1730 1735 1740

Leu Ile Asn Pro Gln Gly Pro Phe Ser Gln Cys His Gln Val Val Pro
1745 1750 1755 1760

Pro Gln Ser Ser Phe Ala Ser Cys Val His Gly Gln Cys Gly Thr Lys
1765 1770 1775

Gly Asp Thr Thr Ala Leu Cys Arg Ser Leu Gln Ala Tyr Ala Ser Leu
1780 1785 1790

Cys Ala Gln Ala Gly Gln Ala Pro Ala Trp Arg Asn Arg Thr Phe Cys
1795 1800 1805

Pro Met Arg Cys Pro Pro Gly Ser Ser Tyr Ser Pro Cys Ser Ser Pro
1810 1815 1820

Cys Pro Asp Thr Cys Ser Ser Ile Asn Asn Pro Arg Asp Cys Pro Lys
1825 1830 1835 1840

Ala Leu Pro Cys Ala Glu Ser Cys Glu Cys Gln Lys Gly His Ile Leu
1845 1850 1855

Ser Gly Thr Ser Cys Val Pro Leu Gly Gln Cys Gly Cys Thr Asp Pro
1860 1865 1870

Ala Gly Ser Tyr His Pro Val Gly Glu Arg Trp Tyr Thr Glu Asn Thr
1875 1880 1885

Cys Thr Arg Leu Cys Thr Cys Ser Val His Asn Asn Ile Thr Cys Phe
1890 1895 1900

Gln Ser Thr Cys Lys Pro Asn Gln Ile Cys Trp Ala Leu Asp Gly Leu
1905 1910 1915 1920

Leu Arg Cys Arg Ala Ser Gly Val Gly Val Cys Gln Leu Pro Gly Glu
1925 1930 1935

Ser His Tyr Val Ser Phe Asp Gly Ser Asn His Ser Ile Pro Asp Ala
1940 1945 1950

Cys Thr Leu Val Leu Val Lys Val Cys His Pro Ala Met Ala Leu Pro
1955 1960 1965

Phe Phe Lys Ile Ser Ala Lys His Glu Lys Glu Glu Gly Gly Thr Glu
1970 1975 1980

Ala Phe Arg Leu His Glu Val Tyr Ile Asp Ile Tyr Asp Ala Gln Val
1985 1990 1995 2000

Thr Leu Gln Lys Gly His Arg Val Leu Ile Asn Ser Lys Gln Val Thr
2005 2010 2015

Leu Pro Ala Ile Ser Gln Ile Pro Gly Val Ser Val Lys Ser Ser Ser
2020 2025 2030

Ile Tyr Ser Ile Val Asn Ile Lys Ile Gly Val Gln Val Lys Phe Asp
2035 2040 2045

Gly Asn His Leu Leu Glu Ile Glu Ile Pro Thr Thr Tyr Tyr Gly Lys
2050 2055 2060

Val Cys Gly Met Cys Gly Asn Phe Asn Asp Glu Glu Glu Asp Glu Leu
2065 2070 2075 2080

Met Met Pro Ser Asp Glu Val Ala Asn Ser Asp Ser Glu Phe Val Asn
2085 2090 2095

Ser Trp Lys Asp Lys Asp Ile Asp Pro Ser Cys Gln Ser Leu Leu Val
2100 2105 2110

Asp Glu Gln Gln Ile Pro Ala Glu Gln Gln Glu Asn Pro Ser Gly Asn
2115 2120 2125

Cys Arg Ala Ala Asp Leu Arg Arg Ala Arg Glu Lys Cys Glu Ala Ala
2130 2135 2140

Leu Arg Ala Pro Val Trp Ala Gln Cys Ala Ser Arg Ile Asp Leu Thr
2145 2150 2155 2160

Pro Phe Leu Val Asp Cys Ala Asn Thr Leu Cys Glu Phe Gly Gly Leu
2165 2170 2175

Tyr Gln Ala Leu Cys Gln Ala Leu Gln Ala Phe Gly Ala Thr Cys Gln
2180 2185 2190

Ser Gln Gly Leu Lys Pro Pro Leu Trp Arg Asn Ser Ser Phe Cys Pro
2195 2200 2205

Leu Glu Cys Pro Ala Tyr Ser Ser Tyr Thr Asn Cys Leu Pro Ser Cys
2210 2215 2220

Ser Pro Ser Cys Trp Asp Leu Asp Gly Arg Cys Glu Gly Ala Lys Val
2225 2230 2235 2240

Pro Ser Ala Cys Ala Glu Gly Cys Ile Cys Gln Pro Gly Tyr Val Leu
2245 2250 2255

Ser Glu Asp Lys Cys Val Pro Arg Ser Gln Cys Gly Cys Lys Asp Ala
2260 2265 2270

His Gly Gly Ser Ile Pro Leu Gly Lys Ser Trp Val Ser Ser Gly Cys
2275 2280 2285

Thr Glu Lys Cys Val Cys Thr Gly Gly Ala Ile Gln Cys Gly Asp Phe
2290 2295 2300

Arg Cys Pro Ser Gly Ser His Cys Gln Leu Thr Ser Asp Asn Ser Asn
2305 2310 2315 2320

Ser Asn Cys Val Ser Asp Lys Ser Glu Gln Cys Ser Val Tyr Gly Asp
2325 2330 2335

Pro Arg Tyr Leu Thr Phe Asp Gly Phe Ser Tyr Arg Leu Gln Gly Arg
2340 2345 2350

Met Thr Tyr Val Leu Ile Lys Thr Val Asp Val Leu Pro Glu Gly Val
2355 2360 2365

Glu Pro Leu Leu Val Glu Gly Arg Asn Lys Met Asp Pro Pro Arg Ser
2370 2375 2380

Ser Ile Phe Leu Gln Glu Val Ile Thr Thr Val Tyr Gly Tyr Lys Val
2385 2390 2395 2400

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Gln Leu Gln Ala Gly Leu Glu Leu Val Val Asn Asn Gln Lys Met Ala
               2405                2410                2415

Val Pro Tyr Arg Pro Asn Glu His Leu Arg Val Thr Leu Trp Gly Gln
           2420                2425                2430

Arg Leu Tyr Leu Val Thr Asp Phe Glu Leu Val Val Ser Phe Gly Gly
       2435                2440                2445

Arg Lys Asn Ala Val Ile Ser Leu Pro Ser Met Tyr Glu Gly Leu Val
   2450                2455                2460

Ser Gly Leu Cys Gly Asn Tyr Asp Lys Asn Arg Lys Asn Asp Met Met
2465                2470                2475                2480

Leu Pro Ser Gly Ala Leu Thr Gln Asn Leu Asn Thr Phe Gly Asn Ser
               2485                2490                2495

Trp Glu Val Lys Thr Glu Asp Ala Leu Leu Arg Phe Pro Arg Ala Ile
           2500                2505                2510

Pro Ala Glu Glu Glu Gly Gln Gly Ala Glu Leu Gly Leu Arg Thr Gly
       2515                2520                2525

Leu Gln Val Ser Glu Cys Ser Pro Glu Gln Leu Ala Ser Asn Ser Thr
   2530                2535                2540

Gln Ala Cys Arg Val Leu Ala Asp Pro Gln Gly Pro Phe Ala Ala Cys
2545                2550                2555                2560

His Gln Thr Val Ala Pro Glu Pro Phe Gln Glu His Cys Val Leu Asp
               2565                2570                2575

Leu Cys Ser Ala Gln Asp Pro Arg Glu Gln Glu Glu Leu Arg Cys Gln
           2580                2585                2590

Val Leu Ser Gly Trp Ala Ala Ala Phe
       2595                2600


<210> 60
<211> 1022
<212> PRT
<213> Homo sapiens

<400> 60
Ala Gly Ala Thr Leu Thr Ser Pro Trp Pro Thr Met Arg Val Phe Leu
  1               5                  10                  15

Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser Gln Leu Arg Ala Val
             20                  25                  30

Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr Val Asp Tyr His Tyr
         35                  40                  45

Ser Arg Gln Tyr Pro Val Phe Arg Gly Arg Pro Ser Gly Asn Glu Ser
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     50                  55                  60

Gln His Arg Leu Asp Phe Gln Leu Met Leu Lys Ile Arg Asp Thr Leu
 65                  70                  75                  80

Tyr Ile Ala Gly Arg Asp Gln Val Tyr Thr Val Asn Leu Asn Glu Met
                 85                  90                  95

Pro Lys Thr Glu Val Ile Pro Asn Lys Lys Leu Thr Trp Arg Ser Arg
            100                 105                 110

Gln Gln Asp Arg Glu Asn Cys Ala Met Lys Gly Lys His Lys Asp Glu
        115                 120                 125

Cys His Asn Phe Ile Lys Val Phe Val Pro Arg Asn Asp Glu Met Val
    130                 135                 140

Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Met Cys Arg Tyr Tyr Arg
145                 150                 155                 160

Leu Ser Thr Leu Glu Tyr Asp Gly Glu Glu Ile Ser Gly Leu Ala Arg
                165                 170                 175

Cys Pro Phe Asp Ala Arg Gln Thr Asn Val Ala Leu Phe Ala Asp Gly
            180                 185                 190

Lys Leu Tyr Ser Ala Thr Val Ala Asp Phe Leu Ala Ser Asp Ala Val
        195                 200                 205

Ile Tyr Arg Ser Met Gly Asp Gly Ser Ala Leu Arg Thr Ile Lys Tyr
    210                 215                 220

Asp Ser Lys Trp Ile Lys Glu Pro His Phe Leu His Ala Ile Glu Tyr
225                 230                 235                 240

Gly Asn Tyr Val Tyr Phe Phe Phe Arg Glu Ile Ala Val Glu His Asn
                245                 250                 255

Asn Leu Gly Lys Ala Val Tyr Ser Arg Val Ala Arg Ile Cys Lys Asn
            260                 265                 270

Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys His Trp Thr Ser Phe
        275                 280                 285

Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp Ser Phe Phe Tyr
    290                 295                 300

Phe Asp Val Leu Gln Ser Ile Thr Asp Ile Ile Gln Ile Asn Gly Ile
305                 310                 315                 320

Pro Thr Val Val Gly Val Phe Thr Thr Gln Leu Asn Ser Ile Pro Gly
                325                 330                 335

Ser Ala Val Cys Ala Phe Ser Met Asp Asp Ile Glu Lys Val Phe Lys
            340                 345                 350

Gly Arg Phe Lys Glu Gln Lys Thr Pro Asp Ser Val Trp Thr Ala Val
```

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        355                 360                 365

Pro Glu Asp Lys Val Pro Lys Pro Arg Pro Gly Cys Cys Ala Lys His
    370                 375                 380

Gly Leu Ala Glu Ala Tyr Lys Thr Ser Ile Asp Phe Pro Asp Glu Thr
385                 390                 395                 400

Leu Ser Phe Ile Lys Ser His Pro Leu Met Asp Ser Ala Val Pro Pro
                405                 410                 415

Ile Ala Asp Glu Pro Trp Phe Thr Lys Thr Arg Val Arg Tyr Arg Leu
            420                 425                 430

Thr Ala Ile Ser Val Asp His Ser Ala Gly Pro Tyr Gln Asn Tyr Thr
        435                 440                 445

Val Ile Phe Val Gly Ser Glu Ala Gly Met Val Leu Lys Val Leu Ala
    450                 455                 460

Lys Thr Ser Pro Phe Ser Leu Asn Asp Ser Val Leu Leu Glu Glu Ile
465                 470                 475                 480

Glu Ala Tyr Asn His Ala Lys Cys Ser Ala Glu Asn Glu Glu Asp Lys
                485                 490                 495

Lys Val Ile Ser Leu Gln Leu Asp Lys Asp His His Ala Leu Tyr Val
            500                 505                 510

Ala Phe Ser Ser Cys Ile Ile Arg Ile Pro Leu Ser Arg Cys Glu Arg
        515                 520                 525

Tyr Gly Ser Cys Lys Lys Ser Cys Ile Ala Ser Arg Asp Pro Tyr Cys
    530                 535                 540

Gly Trp Leu Ser Gln Gly Ser Cys Gly Arg Val Thr Pro Gly Met Leu
545                 550                 555                 560

Leu Leu Thr Glu Asp Phe Phe Ala Phe His Asn His Ser Ala Glu Gly
                565                 570                 575

Tyr Glu Gln Asp Thr Glu Phe Gly Asn Thr Ala His Leu Gly Asp Cys
            580                 585                 590

His Gly Val Arg Trp Glu Val Gln Ser Gly Glu Ser Asn Gln Met Val
        595                 600                 605

His Met Asn Val Leu Ile Thr Cys Val Phe Ala Ala Phe Val Leu Gly
    610                 615                 620

Ala Phe Ile Ala Gly Val Ala Val Tyr Cys Tyr Arg Asp Met Phe Val
625                 630                 635                 640

Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu Ser Ala Gln Ser Cys
                645                 650                 655

Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn Gly Leu Phe Asp Ser
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660 665 670

Pro Val Lys Glu Tyr Gln Gln Asn Ile Asp Ser Pro Lys Leu Tyr Ser
675 680 685

Asn Leu Leu Thr Ser Arg Lys Glu Leu Pro Pro Asn Gly Asp Thr Lys
690 695 700

Ser Met Val Met Asp His Arg Gly Gln Pro Pro Glu Leu Ala Ala Leu
705 710 715 720

Pro Thr Pro Glu Ser Thr Pro Val Leu His Gln Lys Thr Leu Gln Ala
725 730 735

Met Lys Ser His Ser Glu Lys Ala His Gly His Gly Ala Ser Arg Lys
740 745 750

Glu Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro Pro His Ser Pro Leu
755 760 765

Ser His Gly His Ile Pro Ser Ala Ile Val Leu Pro Asn Ala Thr His
770 775 780

Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala His Lys Ala Glu Lys
785 790 795 800

Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys Ser Ser Ser Lys Arg
805 810 815

Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr Leu Asn Asp Leu Leu
820 825 830

Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys Ala Ile Met Gly Asp
835 840 845

Ile Gln Met Ala His Gln Asn Leu Met Leu Asp Pro Met Gly Ser Met
850 855 860

Ser Glu Val Pro Pro Lys Val Pro Asn Arg Glu Ala Ser Leu Tyr Ser
865 870 875 880

Pro Pro Ser Thr Leu Pro Arg Asn Ser Pro Thr Lys Arg Val Asp Val
885 890 895

Pro Thr Thr Pro Gly Val Pro Met Thr Ser Leu Glu Arg Gln Arg Gly
900 905 910

Tyr His Lys Asn Ser Ser Gln Arg His Ser Ile Ser Ala Met Pro Lys
915 920 925

Asn Leu Asn Ser Pro Asn Gly Val Leu Leu Ser Arg Gln Pro Ser Met
930 935 940

Asn Arg Gly Gly Tyr Met Pro Thr Pro Thr Gly Ala Lys Val Asp Tyr
945 950 955 960

Ile Gln Gly Thr Pro Val Ser Val His Leu Gln Pro Ser Leu Ser Arg

965 970 975

Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro Arg Thr Gly Leu Lys
980 985 990

Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Val
995 1000 1005

Pro Gln Thr Pro Ser Val Arg Pro Leu Asn Lys Tyr Thr Tyr
1010 1015 1020

<210> 61
<211> 1011
<212> PRT
<213> Homo sapiens

<400> 61
Met Arg Val Phe Leu Leu Cys Ala Tyr Ile Leu Leu Leu Met Val Ser
1 5 10 15

Gln Leu Arg Ala Val Ser Phe Pro Glu Asp Asp Glu Pro Leu Asn Thr
20 25 30

Val Asp Tyr His Tyr Ser Arg Gln Tyr Pro Val Phe Arg Gly Arg Pro
35 40 45

Ser Gly Asn Glu Ser Gln His Arg Leu Asp Phe Gln Leu Met Leu Lys
50 55 60

Ile Arg Asp Thr Leu Tyr Ile Ala Gly Arg Asp Gln Val Tyr Thr Val
65 70 75 80

Asn Leu Asn Glu Met Pro Lys Thr Glu Val Ile Pro Asn Lys Lys Leu
85 90 95

Thr Trp Arg Ser Arg Gln Gln Asp Arg Glu Asn Cys Ala Met Lys Gly
100 105 110

Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe Val Pro Arg
115 120 125

Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Met
130 135 140

Cys Arg Tyr Tyr Arg Leu Ser Thr Leu Glu Tyr Asp Gly Glu Glu Ile
145 150 155 160

Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr Asn Val Ala
165 170 175

Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala Asp Phe Leu
180 185 190

Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly Ser Ala Leu
195 200 205

Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro His Phe Leu
210 215 220

His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe Arg Glu Ile
225 230 235 240

Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser Arg Val Ala
245 250 255

Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys
260 265 270

His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly
275 280 285

Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr Asp Ile Ile
290 295 300

Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr Thr Gln Leu
305 310 315 320

Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met Asp Asp Ile
325 330 335

Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr Pro Asp Ser
340 345 350

Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro Arg Pro Gly
355 360 365

Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr Ser Ile Asp
370 375 380

Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro Leu Met Asp
385 390 395 400

Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr Lys Thr Arg
405 410 415

Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser Ala Gly Pro
420 425 430

Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala Gly Met Val
435 440 445

Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn Asp Ser Val
450 455 460

Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys Cys Ser Ala Glu
465 470 475 480

Asn Glu Glu Asp Lys Lys Val Ile Ser Leu Gln Leu Asp Lys Asp His
485 490 495

His Ala Leu Tyr Val Ala Phe Ser Ser Cys Ile Ile Arg Ile Pro Leu
500 505 510

Ser Arg Cys Glu Arg Tyr Gly Ser Cys Lys Lys Ser Cys Ile Ala Ser
515 520 525

Arg Asp Pro Tyr Cys Gly Trp Leu Ser Gln Gly Ser Cys Gly Arg Val
530 535 540

Thr Pro Gly Met Leu Leu Leu Thr Glu Asp Phe Phe Ala Phe His Asn
545 550 555 560

His Ser Ala Glu Gly Tyr Glu Gln Asp Thr Glu Phe Gly Asn Thr Ala
565 570 575

His Leu Gly Asp Cys His Gly Val Arg Trp Glu Val Gln Ser Gly Glu
580 585 590

Ser Asn Gln Met Val His Met Asn Val Leu Ile Thr Cys Val Phe Ala
595 600 605

Ala Phe Val Leu Gly Ala Phe Ile Ala Gly Val Ala Val Tyr Cys Tyr
610 615 620

Arg Asp Met Phe Val Arg Lys Asn Arg Lys Ile His Lys Asp Ala Glu
625 630 635 640

Ser Ala Gln Ser Cys Thr Asp Ser Ser Gly Ser Phe Ala Lys Leu Asn
645 650 655

Gly Leu Phe Asp Ser Pro Val Lys Glu Tyr Gln Gln Asn Ile Asp Ser
660 665 670

Pro Lys Leu Tyr Ser Asn Leu Leu Thr Ser Arg Lys Glu Leu Pro Pro
675 680 685

Asn Gly Asp Thr Lys Ser Met Val Met Asp His Arg Gly Gln Pro Pro
690 695 700

Glu Leu Ala Ala Leu Pro Thr Pro Glu Ser Thr Pro Val Leu His Gln
705 710 715 720

Lys Thr Leu Gln Ala Met Lys Ser His Ser Glu Lys Ala His Gly His
725 730 735

Gly Ala Ser Arg Lys Glu Thr Pro Gln Phe Phe Pro Ser Ser Pro Pro
740 745 750

Pro His Ser Pro Leu Ser His Gly His Ile Pro Ser Ala Ile Val Leu
755 760 765

Pro Asn Ala Thr His Asp Tyr Asn Thr Ser Phe Ser Asn Ser Asn Ala
770 775 780

His Lys Ala Glu Lys Lys Leu Gln Asn Ile Asp His Pro Leu Thr Lys
785 790 795 800

Ser Ser Ser Lys Arg Asp His Arg Arg Ser Val Asp Ser Arg Asn Thr
805 810 815

```
Leu Asn Asp Leu Leu Lys His Leu Asn Asp Pro Asn Ser Asn Pro Lys
            820                 825                 830

Ala Ile Met Gly Asp Ile Gln Met Ala His Gln Asn Leu Met Leu Asp
        835                 840                 845

Pro Met Gly Ser Met Ser Glu Val Pro Pro Lys Val Pro Asn Arg Glu
    850                 855                 860

Ala Ser Leu Tyr Ser Pro Pro Ser Thr Leu Pro Arg Asn Ser Pro Thr
865                 870                 875                 880

Lys Arg Val Asp Val Pro Thr Thr Pro Gly Val Pro Met Thr Ser Leu
                885                 890                 895

Glu Arg Gln Arg Gly Tyr His Lys Asn Ser Ser Gln Arg His Ser Ile
            900                 905                 910

Ser Ala Met Pro Lys Asn Leu Asn Ser Pro Asn Gly Val Leu Leu Ser
        915                 920                 925

Arg Gln Pro Ser Met Asn Arg Gly Gly Tyr Met Pro Thr Pro Thr Gly
    930                 935                 940

Ala Lys Val Asp Tyr Ile Gln Gly Thr Pro Val Ser Val His Leu Gln
945                 950                 955                 960

Pro Ser Leu Ser Arg Gln Ser Ser Tyr Thr Ser Asn Gly Thr Leu Pro
                965                 970                 975

Arg Thr Gly Leu Lys Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro
            980                 985                 990

Lys Pro Ser Phe Val Pro Gln Thr Pro Ser Val Arg Pro Leu Asn Lys
        995                1000                1005

Tyr Thr Tyr
   1010
```

<210> 62
<211> 367
<212> PRT
<213> Homo sapiens

<400> 62

```
Met Lys Gly Lys His Lys Asp Glu Cys His Asn Phe Ile Lys Val Phe
  1               5                  10                  15

Val Pro Arg Asn Asp Glu Met Val Phe Val Cys Gly Thr Asn Ala Phe
             20                  25                  30

Asn Pro Met Cys Arg Tyr Tyr Arg Leu Ser Thr Leu Glu Tyr Asp Gly
         35                  40                  45

Glu Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg Gln Thr
     50                  55                  60
```

Asn Val Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Ala
65 70 75 80

Asp Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly Asp Gly
85 90 95

Ser Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys Glu Pro
100 105 110

His Phe Leu His Ala Ile Glu Tyr Gly Asn Tyr Val Tyr Phe Phe Phe
115 120 125

Arg Glu Ile Ala Val Glu His Asn Asn Leu Gly Lys Ala Val Tyr Ser
130 135 140

Arg Val Ala Arg Ile Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val
145 150 155 160

Leu Glu Lys His Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser
165 170 175

Val Pro Gly Asp Ser Phe Phe Tyr Phe Asp Val Leu Gln Ser Ile Thr
180 185 190

Asp Ile Ile Gln Ile Asn Gly Ile Pro Thr Val Val Gly Val Phe Thr
195 200 205

Thr Gln Leu Asn Ser Ile Pro Gly Ser Ala Val Cys Ala Phe Ser Met
210 215 220

Asp Asp Ile Glu Lys Val Phe Lys Gly Arg Phe Lys Glu Gln Lys Thr
225 230 235 240

Pro Asp Ser Val Trp Thr Ala Val Pro Glu Asp Lys Val Pro Lys Pro
245 250 255

Arg Pro Gly Cys Cys Ala Lys His Gly Leu Ala Glu Ala Tyr Lys Thr
260 265 270

Ser Ile Asp Phe Pro Asp Glu Thr Leu Ser Phe Ile Lys Ser His Pro
275 280 285

Leu Met Asp Ser Ala Val Pro Pro Ile Ala Asp Glu Pro Trp Phe Thr
290 295 300

Lys Thr Arg Val Arg Tyr Arg Leu Thr Ala Ile Ser Val Asp His Ser
305 310 315 320

Ala Gly Pro Tyr Gln Asn Tyr Thr Val Ile Phe Val Gly Ser Glu Ala
325 330 335

Gly Met Val Leu Lys Val Leu Ala Lys Thr Ser Pro Phe Ser Leu Asn
340 345 350

Asp Ser Val Leu Leu Glu Glu Ile Glu Ala Tyr Asn His Ala Lys
355 360 365

<210> 63
<211> 1030
<212> PRT
<213> Homo sapiens

<400> 63
Met Arg Ser Glu Ala Leu Leu Leu Tyr Phe Thr Leu Leu His Phe Ala
1 5 10 15

Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
20 25 30

Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
35 40 45

Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
50 55 60

Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65 70 75 80

Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
85 90 95

Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
100 105 110

His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
115 120 125

Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
130 135 140

Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser
145 150 155 160

Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu
165 170 175

Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
180 185 190

Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg
195 200 205

Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
210 215 220

Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225 230 235 240

Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
245 250 255

Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln

260 265 270

Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
275 280 285

Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
290 295 300

Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305 310 315 320

Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
325 330 335

Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
340 345 350

Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
355 360 365

Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe
370 375 380

Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385 390 395 400

Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val
405 410 415

Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr
420 425 430

Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
435 440 445

Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu
450 455 460

Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp
465 470 475 480

Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
485 490 495

Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
500 505 510

Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
515 520 525

Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His
530 535 540

Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
545 550 555 560

Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn

565 570 575

Gly His Ser Ser Ser Leu Leu Pro Ser Thr Thr Thr Ser Asp Ser Thr
580 585 590

Ala Gln Glu Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Lys His
595 600 605

Leu Leu Asp Ser Pro Asp Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
610 615 620

His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625 630 635 640

Gly His Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
645 650 655

Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Thr Val Tyr Cys
660 665 670

Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
675 680 685

Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
690 695 700

Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705 710 715 720

Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Gly
725 730 735

Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
740 745 750

Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Gln Lys Arg
755 760 765

Lys Pro Ser Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Leu Ile
770 775 780

Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785 790 795 800

Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
805 810 815

Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
820 825 830

Pro Lys Met Ser Glu Val Ala Gln Met Ala Leu Glu Asp Gln Ala Ala
835 840 845

Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Lys Ser Pro
850 855 860

Asn His Gly Val Asn Leu Val Glu Asn Leu Asp Ser Leu Pro Pro Lys

```
865                 870                 875                 880

Val Pro Gln Arg Glu Ala Ser Leu Gly Pro Pro Gly Ala Ser Leu Ser
                885                 890                 895

Gln Thr Gly Leu Ser Lys Arg Leu Glu Met His His Ser Ser Ser Tyr
            900                 905                 910

Gly Val Asp Tyr Lys Arg Ser Tyr Pro Thr Asn Ser Leu Thr Arg Ser
        915                 920                 925

His Gln Ala Thr Thr Leu Lys Arg Asn Asn Thr Asn Ser Ser Asn Ser
    930                 935                 940

Ser His Leu Ser Arg Asn Gln Ser Phe Gly Arg Gly Asp Asn Pro Pro
945                 950                 955                 960

Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser Gln Pro
                965                 970                 975

Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn Ala Tyr
            980                 985                 990

Asn Ser Leu Thr Arg Ser Gly Leu Lys Arg Thr Pro Ser Leu Lys Pro
        995                1000                1005

Asp Val Pro Pro Lys Pro Ser Phe Ala Pro Leu Ser Thr Ser Met Lys
   1010                1015                1020

Pro Asn Asp Ala Cys Thr
1025               1030
```

<210> 64
<211> 888
<212> PRT
<213> Homo sapiens

<400> 64

```
Met Arg Pro Ala Ala Leu Leu Leu Cys Leu Thr Leu Leu His Cys Ala
  1               5                  10                  15

Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
             20                  25                  30

Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
         35                  40                  45

Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
     50                  55                  60

Asn Arg Thr Leu Tyr Val Ala Ala Arg Asp His Ile Tyr Thr Val Asp
 65                  70                  75                  80

Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
                 85                  90                  95
```

```
Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
            100                 105                 110

His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
        115                 120                 125

Asp Asp Thr Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
    130                 135                 140

Arg Asn Tyr Arg Val Asp Thr Leu Glu Thr Phe Gly Asp Glu Phe Ser
145                 150                 155                 160

Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Ile Ala Leu
                165                 170                 175

Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
            180                 185                 190

Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Asp Ser Pro Thr Leu Arg
        195                 200                 205

Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
    210                 215                 220

Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225                 230                 235                 240

Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
                245                 250                 255

Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln
            260                 265                 270

Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
        275                 280                 285

Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
    290                 295                 300

Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305                 310                 315                 320

Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
                325                 330                 335

Asn Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
            340                 345                 350

Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
        355                 360                 365

Cys Ala Gly Ser Ser Ser Leu Glu Lys Tyr Ala Thr Ser Asn Glu Phe
    370                 375                 380

Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385                 390                 395                 400
```

Ala Val Pro Ser Ile Ile Asn Arg Pro Trp Phe Leu Arg Thr Met Val
405 410 415

Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Asn Ala Ala Gly Pro Tyr
420 425 430

Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
435 440 445

Lys Phe Leu Ala Arg Ile Gly Ser Ser Gly Phe Leu Asn Gly Ser Leu
450 455 460

Phe Leu Glu Glu Met Asn Val Tyr Asn Pro Glu Lys Cys Ser Tyr Asp
465 470 475 480

Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
485 490 495

Gly Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
500 505 510

Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
515 520 525

Arg Asp Pro Tyr Cys Gly Trp Val Arg Glu Ser Gly Ser Cys Ala His
530 535 540

Leu Ser Pro Leu Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
545 550 555 560

Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn
565 570 575

Gly His Ala Ser Ser Leu Tyr Pro Ser Thr Thr Thr Ser Asp Ser Ala
580 585 590

Ser Arg Asp Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Asn Asp
595 600 605

Leu Leu Glu Ala Pro Gly Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
610 615 620

His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625 630 635 640

Ser Asn Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
645 650 655

Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Ile Val Tyr Cys
660 665 670

Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
675 680 685

Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
690 695 700

Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705 710 715 720

Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Ser
725 730 735

Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
740 745 750

Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Glu Lys Arg
755 760 765

Lys Pro Asn Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Ile Ile
770 775 780

Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785 790 795 800

Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
805 810 815

Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
820 825 830

Pro Lys Met Ser Glu Val Val Ala Gln Met Ala Leu Glu Asp Gln Ala
835 840 845

Ala Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Glu Ser
850 855 860

Ser Pro Tyr Val Leu Lys Gln Phe Ser Glu Ala Phe Asn Arg Gln Gly
865 870 875 880

Ile Ile Leu Ser Val Ala Val Glu
885

<210> 65
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 65
gatctcccgg aaaccctctg agccgaaggg 30

<210> 66
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:

oligonucleotide primer

<400> 66
ggcagcgccc tacacggt 18

<210> 67
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 67
gatgagtgcg cgactggc 18

<210> 68
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 68
cctcagcgtc cgcctcct 18

<210> 69
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 69
cgcactcatc cacatcttcg c 21

<210> 70
<211> 703
<212> PRT
<213> Homo sapiens

<400> 70
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile
1 5 10 15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr
20 25 30

```
Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro
         35                  40                  45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu
     50                  55                  60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys
 65                  70                  75                  80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp
                 85                  90                  95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys
            100                 105                 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile
        115                 120                 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala
    130                 135                 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly
145                 150                 155                 160

Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
                165                 170                 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser
            180                 185                 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp
        195                 200                 205

Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr
    210                 215                 220

Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg
225                 230                 235                 240

Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met
                245                 250                 255

Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro
            260                 265                 270

Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val
        275                 280                 285

Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr
    290                 295                 300

Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg
305                 310                 315                 320

Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala
                325                 330                 335
```

Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys
340 345 350

Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His
355 360 365

Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu
370 375 380

His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu
385 390 395 400

Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly
405 410 415

Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn
420 425 430

Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr
435 440 445

Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val
450 455 460

Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly
465 470 475 480

Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser
485 490 495

Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg
500 505 510

Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg
515 520 525

Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala
530 535 540

Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro
545 550 555 560

Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg
565 570 575

Arg Val Ala Asp Glu Pro Glu Arg Ile Gly Gly Pro Glu Val Thr Ser
580 585 590

Cys His Leu Pro Trp Asp Gln Thr Glu Thr Ala Pro Arg Leu Leu Arg
595 600 605

Phe Pro Trp Ser Val Lys Leu Thr Ser Ser Arg Pro Pro Glu Ala Leu
610 615 620

Met Ala Ala Leu Arg Gln Ala Thr Ala Ala Ala Arg Cys Arg Cys Arg
625 630 635 640

```
Gln Pro Gln Pro Phe Leu Leu Ala Cys Leu His Gly Gly Ala Gly Gly
                645                 650                 655

Pro Glu Pro Leu Ser His Phe Glu Val Glu Val Cys Gln Leu Pro Arg
            660                 665                 670

Pro Gly Leu Arg Gly Val Leu Phe Arg Arg Val Ala Gly Thr Ala Leu
        675                 680                 685

Ala Phe Arg Thr Leu Val Thr Arg Ile Ser Asn Asp Leu Glu Leu
    690                 695                 700


<210> 71
<211> 639
<212> PRT
<213> Homo sapiens

<400> 71
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile
  1               5                  10                  15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr
             20                  25                  30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro
         35                  40                  45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu
     50                  55                  60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys
 65                  70                  75                  80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp
                 85                  90                  95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys
            100                 105                 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile
        115                 120                 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala
    130                 135                 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly
145                 150                 155                 160

Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
                165                 170                 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser
            180                 185                 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp
        195                 200                 205
```

Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr
210 215 220

Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg
225 230 235 240

Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met
245 250 255

Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro
260 265 270

Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val
275 280 285

Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr
290 295 300

Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg
305 310 315 320

Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala
325 330 335

Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys
340 345 350

Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His
355 360 365

Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu
370 375 380

His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu
385 390 395 400

Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly
405 410 415

Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn
420 425 430

Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr
435 440 445

Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val
450 455 460

Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly
465 470 475 480

Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser
485 490 495

Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg
500 505 510

Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg
515 520 525

Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala
530 535 540

Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro
545 550 555 560

Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg
565 570 575

Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val
580 585 590

Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn
595 600 605

Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly
610 615 620

Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val
625 630 635

<210> 72
<211> 639
<212> PRT
<213> Homo sapiens

<400> 72
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile
1 5 10 15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr
20 25 30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro
35 40 45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu
50 55 60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys
65 70 75 80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp
85 90 95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys
100 105 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile
115 120 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala

130 135 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly
145 150 155 160

Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
165 170 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser
180 185 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp
195 200 205

Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr
210 215 220

Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg
225 230 235 240

Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met
245 250 255

Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro
260 265 270

Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val
275 280 285

Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr
290 295 300

Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg
305 310 315 320

Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala
325 330 335

Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys
340 345 350

Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His
355 360 365

Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu
370 375 380

His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu
385 390 395 400

Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly
405 410 415

Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn
420 425 430

Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr

```
        435                 440                 445

Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val
    450                 455                 460

Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly
465                 470                 475                 480

Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser
                485                 490                 495

Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg
            500                 505                 510

Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg
        515                 520                 525

Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala
    530                 535                 540

Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro
545                 550                 555                 560

Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg
                565                 570                 575

Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val
            580                 585                 590

Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn
        595                 600                 605

Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly
    610                 615                 620

Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val
625                 630                 635


<210> 73
<211> 639
<212> PRT
<213> Homo sapiens

<400> 73
Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr Ile
  1               5                  10                  15

Gly Lys Gly Asn Ser Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr
             20                  25                  30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro
         35                  40                  45

Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly Leu
     50                  55                  60
```

```
Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu Lys
 65                  70                  75                  80

Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Val Phe Asp
                 85                  90                  95

Tyr Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys
            100                 105                 110

Phe Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile
        115                 120                 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala
    130                 135                 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly
145                 150                 155                 160

Ser Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
                165                 170                 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser
            180                 185                 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp
        195                 200                 205

Gly His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr
    210                 215                 220

Arg Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg
225                 230                 235                 240

Phe Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met
                245                 250                 255

Lys Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro
            260                 265                 270

Tyr Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val
        275                 280                 285

Met Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr
    290                 295                 300

Ser Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg
305                 310                 315                 320

Lys Thr Glu Glu Gly Gly Asp Arg Gly Ala Pro Gly Leu Ala Leu Ala
                325                 330                 335

Arg Val Arg Ala Pro Ser Asp Thr Thr Asn Gly Thr Ser Ser Ser Lys
            340                 345                 350

Gly Thr Ser His Ser Lys Gly Gln Arg Ser Ser Ser Ser Thr Tyr His
        355                 360                 365
```

```
Arg Gln Arg Arg His Ser Asp Phe Cys Gly Pro Ser Pro Ala Pro Leu
    370                 375                 380

His Pro Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu
385                 390                 395                 400

Glu Arg Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly
                405                 410                 415

Ser Arg Gly Leu Pro Pro Ser Ser Pro Met Val Ser Ser Ala His Asn
            420                 425                 430

Pro Asn Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr
        435                 440                 445

Pro Asn Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val
    450                 455                 460

Cys Thr Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly
465                 470                 475                 480

Lys Glu Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser
                485                 490                 495

Ser His Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg
            500                 505                 510

Gly Ser Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg
        515                 520                 525

Arg Ala Gly Gly Gly Gly Gly Gly Gly Val Gln Asn Gly Pro Pro Ala
    530                 535                 540

Ser Pro Thr Leu Ala His Glu Ala Ala Pro Leu Pro Ala Gly Arg Pro
545                 550                 555                 560

Arg Pro Thr Thr Asn Leu Phe Thr Lys Leu Thr Ser Lys Leu Thr Arg
                565                 570                 575

Arg Val Thr Leu Asp Pro Ser Lys Arg Gln Asn Ser Asn Arg Cys Val
            580                 585                 590

Ser Gly Ala Ser Leu Pro Gln Gly Ser Lys Ile Arg Ser Gln Thr Asn
        595                 600                 605

Leu Arg Glu Ser Gly Asp Leu Arg Ser Gln Val Ala Ile Tyr Leu Gly
    610                 615                 620

Ile Lys Arg Lys Pro Pro Pro Gly Cys Ser Asp Ser Pro Gly Val
625                 630                 635
```

<210> 74
<211> 667
<212> PRT
<213> Homo sapiens

<400> 74

```
Ala Asp Glu Gln Pro His Ile Gly Asn Tyr Arg Leu Leu Lys Thr Ile
 1               5                  10                  15

Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu Thr
            20                  25                  30

Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn Pro
        35                  40                  45

Thr Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Ile Leu
    50                  55                  60

Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Gln Lys
65                  70                  75                  80

Thr Leu Tyr Leu Ile Met Glu Tyr Ala Ser Gly Gly Lys Val Phe Asp
                85                  90                  95

Tyr Leu Val Ala His Gly Arg Met Lys Glu Lys Glu Ala Arg Ser Lys
            100                 105                 110

Phe Arg Gln Ile Val Ser Ala Val Gln Tyr Cys His Gln Lys Arg Ile
        115                 120                 125

Val His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Asp Met
    130                 135                 140

Asn Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly
145                 150                 155                 160

Gly Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
                165                 170                 175

Leu Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Val Trp Ser
            180                 185                 190

Leu Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp
        195                 200                 205

Gly Gln Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Arg Gly Lys Tyr
    210                 215                 220

Arg Ile Pro Phe Tyr Met Ser Thr Asp Cys Glu Asn Leu Leu Lys Arg
225                 230                 235                 240

Phe Leu Val Leu Asn Pro Ile Lys Arg Gly Thr Leu Glu Gln Ile Met
                245                 250                 255

Lys Asp Arg Trp Ile Asn Ala Gly His Glu Glu Asp Glu Leu Lys Pro
            260                 265                 270

Phe Val Glu Pro Glu Leu Asp Ile Ser Asp Gln Lys Arg Ile Asp Ile
        275                 280                 285

Met Val Gly Met Gly Tyr Ser Gln Glu Glu Ile Gln Glu Ser Leu Ser
    290                 295                 300
```

```
Lys Met Lys Tyr Asp Glu Ile Thr Ala Thr Tyr Leu Leu Leu Gly Arg
305                 310                 315                 320

Lys Ser Ser Glu Val Arg Pro Ser Ser Asp Leu Asn Asn Ser Thr Gly
                325                 330                 335

Gln Ser Pro His His Lys Val Gln Arg Ser Val Ser Ser Ser Gln Lys
            340                 345                 350

Gln Arg Arg Tyr Ser Asp His Ala Gly Pro Gly Ile Pro Ser Val Val
        355                 360                 365

Ala Tyr Pro Lys Arg Ser Gln Thr Ser Thr Ala Asp Ser Asp Leu Lys
    370                 375                 380

Glu Asp Gly Ile Ser Ser Arg Lys Ser Thr Gly Ser Ala Val Gly Gly
385                 390                 395                 400

Lys Gly Ile Ala Pro Ala Ser Pro Met Leu Gly Asn Ala Ser Asn Pro
                405                 410                 415

Asn Lys Ala Asp Ile Pro Glu Arg Lys Lys Ser Ser Thr Val Pro Ser
            420                 425                 430

Ser Asn Thr Ala Ser Gly Gly Met Thr Arg Arg Asn Thr Tyr Val Cys
        435                 440                 445

Ser Glu Arg Thr Thr Asp Asp Arg His Ser Val Ile Gln Asn Gly Lys
    450                 455                 460

Glu Asn Ser Thr Ile Pro Asp Gln Arg Thr Pro Val Ala Ser Thr His
465                 470                 475                 480

Ser Ile Ser Ser Ala Ala Thr Pro Asp Arg Ile Arg Phe Pro Arg Gly
                485                 490                 495

Thr Ala Ser Arg Ser Thr Phe His Gly Gln Pro Arg Glu Arg Arg Thr
            500                 505                 510

Ala Thr Tyr Asn Gly Pro Pro Ala Ser Pro Ser Leu Ser His Glu Ala
        515                 520                 525

Thr Pro Leu Ser Gln Thr Arg Ser Arg Gly Ser Thr Thr Leu Phe Ser
    530                 535                 540

Lys Leu Thr Ser Lys Leu Thr Arg Ser Arg Asn Val Ser Ala Lys Gln
545                 550                 555                 560

Lys Asp Glu Asn Lys Glu Ala Lys Pro Arg Ser Leu Arg Phe Thr Trp
                565                 570                 575

Ser Met Lys Thr Thr Ser Ser Met Asp Pro Gly Asp Met Met Arg Glu
            580                 585                 590

Ile Arg Lys Val Leu Asp Ala Asn Asn Cys Asp Tyr Glu Gln Arg Glu
        595                 600                 605
```

Arg Phe Leu Leu Phe Cys Val His Gly Asp Gly His Ala Glu Asn Leu
610 615 620

Val Gln Trp Glu Met Glu Val Cys Lys Leu Pro Arg Leu Ser Leu Asn
625 630 635 640

Gly Val Arg Phe Lys Arg Ile Ser Gly Thr Ser Ile Ala Phe Lys Asn
645 650 655

Ile Ala Ser Lys Ile Ala Asn Glu Leu Lys Leu
660 665

<210> 75
<211> 888
<212> PRT
<213> Homo sapiens

<400> 75
Met Pro Leu Ala Asn His Arg Asp Asp Glu His Gly Val Ala Ser Met
1 5 10 15

Val Ser Val His Val Glu His Pro Gln Glu Ala Ser Val Val Val His
20 25 30

Gln Val Glu Arg Val Ser Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala
35 40 45

Val Ala Arg Ala Glu Ala Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr
50 55 60

Thr Val Leu Ala Gln Ser Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala
65 70 75 80

Ser Gly Phe Gly Tyr Cys Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala
85 90 95

Ser Pro Leu Pro Gly Leu Arg Thr Gln Glu Val Cys Cys Arg Gly Ala
100 105 110

Gly Leu Ala Trp Gly Val His Asp Cys Gln Leu Cys Ser Glu Arg Leu
115 120 125

Gly Asn Ser Glu Arg Val Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly
130 135 140

Phe Glu Arg Val Asn Gly Ser Cys Glu Asp Val Asp Glu Cys Ala Thr
145 150 155 160

Gly Gly Arg Cys Gln His Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr
165 170 175

Thr Cys Val Cys Pro Asp Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser
180 185 190

Cys Ile Ser Gln His Val Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg

```
        195                 200                 205

Val Leu Arg Asp Gly Gly Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr
    210                 215                 220

Lys Gln Ile Cys Cys Cys Ser Arg Val Gly Lys Ala Trp Gly Arg Gly
225                 230                 235                 240

Cys Gln Leu Cys Pro Pro Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys
                245                 250                 255

Pro Ala Gly Pro Gly Tyr His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn
            260                 265                 270

Thr Arg Pro Leu Gly Gln Glu Pro Pro Arg Val Ser Leu Ser Gln Pro
        275                 280                 285

Arg Thr Leu Pro Ala Thr Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr
    290                 295                 300

His Arg Leu Glu Pro Arg Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly
305                 310                 315                 320

Pro Glu Leu Pro Leu Pro Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile
                325                 330                 335

Pro Glu Ser Gly Pro Ser Ser Gly Met Cys Gln Arg Asn Pro Gln Val
            340                 345                 350

Cys Gly Pro Gly Arg Cys Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala
        355                 360                 365

Cys Asp Ser Gly Phe Arg Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp
    370                 375                 380

Val Asp Glu Cys Arg Arg Val Pro Pro Pro Cys Ala Pro Gly Arg Cys
385                 390                 395                 400

Glu Asn Ser Pro Gly Ser Phe Arg Cys Val Cys Gly Pro Gly Phe Arg
                405                 410                 415

Ala Gly Pro Arg Ala Ala Glu Cys Leu Asp Val Asp Glu Cys His Arg
            420                 425                 430

Val Pro Pro Pro Cys Asp Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser
        435                 440                 445

Phe Leu Cys Val Cys Pro Ala Gly Tyr Gln Ala Ala Pro His Gly Ala
    450                 455                 460

Ser Cys Gln Asp Val Asp Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly
465                 470                 475                 480

Arg Gly Ala Cys Lys Asn Leu Pro Gly Ser Phe Arg Cys Val Cys Pro
                485                 490                 495

Ala Gly Phe Arg Gly Ser Ala Cys Glu Glu Asp Val Asp Glu Cys Ala
```

```
            500                 505                 510

Gln Glu Pro Pro Pro Cys Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly
        515                 520                 525

Ser Phe His Cys Ala Cys Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly
    530                 535                 540

Ala Pro Cys Gln Asp Val Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys
545                 550                 555                 560

Thr Tyr Gly Arg Cys Glu Asn Thr Glu Gly Ser Phe Gln Cys Val Cys
                565                 570                 575

Pro Met Gly Phe Gln Pro Asn Thr Ala Gly Ser Glu Cys Glu Asp Val
            580                 585                 590

Asp Glu Cys Glu Asn His Leu Ala Cys Pro Gly Gln Glu Cys Val Asn
        595                 600                 605

Ser Pro Gly Ser Phe Gln Cys Arg Thr Cys Pro Ser Gly His His Leu
    610                 615                 620

His Arg Gly Arg Cys Thr Asp Val Asp Glu Cys Ser Ser Gly Ala Pro
625                 630                 635                 640

Pro Cys Gly Pro His Gly His Cys Thr Asn Thr Glu Gly Ser Phe Arg
                645                 650                 655

Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro
            660                 665                 670

Cys Ala Asp Val Asn Glu Cys Leu Glu Gly Asp Phe Cys Phe Pro His
        675                 680                 685

Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro
    690                 695                 700

Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser Cys Leu Asp Val Asp Glu
705                 710                 715                 720

Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp
                725                 730                 735

Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly His Arg Ala Gly Pro Asp
            740                 745                 750

Leu Ala Ser Cys Leu Asp Val Asp Glu Cys Arg Glu Arg Gly Pro Ala
        755                 760                 765

Leu Cys Gly Ser Gln Arg Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys
    770                 775                 780

Val Arg Asp Cys Asp Pro Gly Tyr His Ala Gly Pro Glu Gly Thr Cys
785                 790                 795                 800

Asp Asp Val Asp Glu Cys Gln Glu Tyr Gly Pro Glu Ile Cys Gly Ala
```

805 810 815

Gln Arg Cys Glu Asn Thr Pro Gly Ser Tyr Arg Cys Thr Pro Ala Cys
820 825 830

Asp Pro Gly Tyr Gln Pro Thr Pro Gly Gly Gly Cys Gln Asp Val Asp
835 840 845

Glu Cys Arg Asn Arg Ser Phe Cys Gly Ala His Ala Val Cys Gln Asn
850 855 860

Leu Pro Gly Ser Phe Gln Cys Leu Cys Asp Gln Val Thr Arg Gly His
865 870 875 880

Gly Met Gly Val Thr Ala Trp Met
885

<210> 76
<211> 1511
<212> PRT
<213> Homo sapiens

<400> 76
Met Gly Arg Pro Ala Pro Ala Val Pro Arg Pro Ala Arg Pro Ala Thr
1 5 10 15

Pro Pro Ala Trp Thr Ala Ala Leu Pro Ala Gly Arg Pro Arg Gly Asp
20 25 30

Pro Gly Phe Arg Ala Phe Leu Cys Pro Leu Ile Cys His Asn Gly Gly
35 40 45

Val Cys Val Lys Pro Asp Arg Cys Leu Cys Pro Pro Asp Phe Ala Gly
50 55 60

Lys Phe Cys Gln Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala
65 70 75 80

Ile Pro Gly Leu Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His
85 90 95

Arg Asp Asp Glu His Gly Val Ala Ser Met Val Ser Val His Val Glu
100 105 110

His Pro Gln Glu Ala Ser Val Val Val His Gln Val Glu Arg Val Ser
115 120 125

Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala
130 135 140

Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser
145 150 155 160

Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys
165 170 175

Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu
180 185 190

Arg Thr Gln Glu Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val
195 200 205

His Asp Cys Gln Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val
210 215 220

Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly
225 230 235 240

Ser Cys Glu Asp Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His
245 250 255

Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp
260 265 270

Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val
275 280 285

Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly
290 295 300

Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys
305 310 315 320

Ser Arg Val Gly Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro
325 330 335

Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr
340 345 350

His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln
355 360 365

Glu Pro Pro Arg Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr
370 375 380

Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg
385 390 395 400

Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly Pro Glu Phe Pro Leu Pro
405 410 415

Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser
420 425 430

Ser Gly Met Cys Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys
435 440 445

Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg
450 455 460

Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg
465 470 475 480

Val Pro Pro Pro Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser
485 490 495

Phe Arg Cys Val Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala
500 505 510

Glu Cys Leu Asp Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp
515 520 525

Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro
530 535 540

Ala Gly Tyr Gln Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp
545 550 555 560

Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly Arg Gly Ala Cys Lys Asn
565 570 575

Leu Pro Gly Ser Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser
580 585 590

Ala Cys Glu Glu Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys
595 600 605

Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys
610 615 620

Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val
625 630 635 640

Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu
645 650 655

Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro
660 665 670

Asn Ala Ala Gly Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His
675 680 685

Leu Ala Cys Pro Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln
690 695 700

Cys Arg Ala Cys Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr
705 710 715 720

Asp Val Asp Glu Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly
725 730 735

His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly
740 745 750

Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu
755 760 765

Cys Leu Glu Gly Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr
770 775 780

```
Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro
785                 790                 795                 800

Arg Gly Ala Ser Cys Leu Asp Val Asp Glu Cys Ser Glu Glu Asp Leu
                805                 810                 815

Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp Gly Ser Phe Glu Cys Ile
            820                 825                 830

Cys Pro Pro Gly His Arg Ala Gly Pro Asp Leu Ala Ser Cys Leu Asp
        835                 840                 845

Val Asp Glu Cys Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg
    850                 855                 860

Cys Glu Asn Ser Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro
865                 870                 875                 880

Gly Tyr His Ala Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys
                885                 890                 895

Gln Glu Tyr Gly Pro Glu Ile Cys Gly Ala Gln Arg Cys Glu Asn Thr
            900                 905                 910

Pro Gly Ser Tyr Arg Cys Thr Pro Ala Cys Asp Pro Gly Tyr Gln Pro
        915                 920                 925

Thr Pro Gly Gly Gly Cys Gln Asp Val Asp Glu Cys Arg Asn Arg Ser
    930                 935                 940

Phe Cys Gly Ala His Ala Val Cys Gln Asn Leu Pro Gly Ser Phe Gln
945                 950                 955                 960

Cys Leu Cys Asp Gln Gly Tyr Glu Gly Ala Arg Asp Gly Arg His Cys
                965                 970                 975

Val Asp Val Asn Glu Cys Glu Thr Leu Gln Gly Val Cys Gly Ala Ala
            980                 985                 990

Leu Cys Glu Asn Val Glu Gly Ser Phe Leu Cys Val Cys Pro Asn Ser
        995                1000                1005

Pro Glu Glu Phe Asp Pro Met Thr Gly Arg Cys Val Pro Pro Arg Thr
   1010                1015                1020

Ser Ala Gly Met Phe Pro Gly Ser Gln Pro Gln Ala Pro Ala Ser Pro
1025                1030                1035                1040

Val Leu Pro Ala Arg Pro Pro Pro Pro Pro Leu Pro Arg Arg Pro Ser
               1045                1050                1055

Thr Pro Arg Gln Gly Pro Val Gly Ser Gly Arg Arg Glu Cys Tyr Phe
           1060                1065                1070

Asp Thr Ala Ala Pro Asp Ala Cys Asp Asn Ile Leu Ala Arg Asn Val
       1075                1080                1085
```

```
Thr Trp Gln Glu Cys Cys Cys Thr Val Gly Glu Gly Trp Gly Ser Gly
   1090                1095                1100

Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu Thr Ala Glu Tyr Gln Ser
1105                1110                1115                1120

Leu Cys Pro His Gly Arg Gly Tyr Leu Ala Pro Ser Gly Asp Leu Ser
                1125                1130                1135

Leu Arg Arg Asp Val Asp Glu Cys Gln Leu Phe Arg Asp Gln Val Cys
            1140                1145                1150

Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr Ser Cys Tyr Cys
        1155                1160                1165

Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu Cys Ile Asp Asn
   1170                1175                1180

Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg Cys Val
1185                1190                1195                1200

Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro Pro Leu Val Leu
                1205                1210                1215

Asp Gly Ser Gln Arg Arg Cys Val Ser Asn Glu Ser Gln Ser Leu Asp
            1220                1225                1230

Asp Asn Leu Gly Val Cys Trp Gln Glu Val Gly Ala Asp Leu Val Cys
        1235                1240                1245

Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr Glu Cys Cys Cys
   1250                1255                1260

Leu Tyr Gly Glu Ala Trp Gly Met Asp Cys Ala Leu Cys Pro Ala Gln
1265                1270                1275                1280

Asp Ser Asp Asp Phe Glu Ala Leu Cys Asn Val Leu Arg Pro Pro Ala
                1285                1290                1295

Tyr Ser Pro Pro Arg Pro Gly Gly Phe Gly Leu Pro Tyr Glu Tyr Gly
            1300                1305                1310

Pro Asp Leu Gly Pro Pro Tyr Gln Gly Leu Pro Tyr Gly Pro Glu Leu
        1315                1320                1325

Tyr Pro Pro Pro Ala Leu Pro Tyr Asp Pro Tyr Pro Pro Pro Pro Gly
   1330                1335                1340

Pro Phe Ala Arg Arg Glu Ala Pro Tyr Gly Ala Pro Arg Phe Asp Met
1345                1350                1355                1360

Pro Asp Phe Glu Asp Asp Gly Gly Pro Tyr Gly Glu Ser Glu Ala Pro
                1365                1370                1375

Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg Asp Thr
            1380                1385                1390
```

```
Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly Ser Tyr
       1395                1400                1405

Ala Gly Ser Leu Ala Glu Pro Tyr Glu Glu Leu Glu Ala Glu Glu Cys
   1410                1415                1420

Gly Ile Leu Asp Gly Cys Thr Asn Gly Arg Cys Val Arg Val Pro Glu
1425                1430                1435                1440

Gly Phe Thr Cys Arg Cys Phe Asp Gly Tyr Arg Leu Asp Met Thr Arg
                1445                1450                1455

Met Ala Cys Val Asp Ile Asn Glu Cys Asp Glu Ala Glu Ala Ala Ser
           1460                1465                1470

Pro Leu Cys Val Asn Ala Arg Cys Leu Asn Thr Asp Gly Ser Phe Arg
       1475                1480                1485

Cys Ile Cys Arg Pro Gly Phe Ala Pro Thr His Gln Pro His His Cys
   1490                1495                1500

Ala Pro Ala Arg Pro Arg Ala
1505                1510
```

<210> 77
<211> 1587
<212> PRT
<213> Homo sapiens

<400> 77

```
Met Gly Asp Val Lys Ala Leu Leu Phe Val Val Ala Ala Arg Ala Arg
  1               5                  10                  15

Arg Leu Gly Gly Ala Ala Ala Ser Glu Ser Leu Ala Val Ser Glu Ala
             20                  25                  30

Phe Cys Arg Val Arg Ser Cys Gln Pro Lys Lys Cys Ala Gly Pro Gln
         35                  40                  45

Arg Cys Leu Asn Pro Val Pro Ala Val Pro Ser Pro Ser Pro Ser Val
     50                  55                  60

Arg Lys Arg Gln Val Ser Leu Asn Trp Gln Pro Leu Thr Leu Gln Glu
 65                  70                  75                  80

Ala Arg Ala Leu Leu Lys Arg Arg Arg Pro Arg Gly Pro Gly Gly Arg
                 85                  90                  95

Gly Leu Leu Arg Arg Arg Pro Pro Gln Arg Ala Pro Ala Gly Lys Ala
            100                 105                 110

Pro Val Leu Cys Pro Leu Ile Cys His Asn Gly Gly Val Cys Val Lys
        115                 120                 125

Pro Asp Arg Cys Phe Cys Pro Pro Asp Phe Ala Gly Lys Phe Cys Gln
    130                 135                 140
```

Leu His Ser Ser Gly Ala Arg Pro Pro Ala Pro Ala Val Pro Gly Leu
145 150 155 160

Thr Arg Ser Val Tyr Thr Met Pro Leu Ala Asn His Arg Asp Asp Glu
165 170 175

His Gly Val Ala Ser Met Val Ser Val His Val Glu His Pro Gln Glu
180 185 190

Ala Ser Val Val Val His Gln Val Glu Arg Val Ser Gly Pro Trp Glu
195 200 205

Glu Ala Asp Ala Glu Ala Val Ala Arg Ala Glu Ala Ala Ala Arg Ala
210 215 220

Glu Ala Ala Ala Pro Tyr Thr Val Leu Ala Gln Ser Ala Pro Arg Glu
225 230 235 240

Asp Gly Tyr Ser Asp Ala Ser Gly Phe Gly Tyr Cys Phe Arg Glu Leu
245 250 255

Arg Gly Gly Glu Cys Ala Ser Pro Leu Pro Gly Leu Arg Thr Gln Glu
260 265 270

Val Cys Cys Arg Gly Ala Gly Leu Ala Trp Gly Val His Asp Cys Gln
275 280 285

Leu Cys Ser Glu Arg Leu Gly Asn Ser Glu Arg Val Ser Ala Pro Asp
290 295 300

Gly Pro Cys Pro Thr Gly Phe Glu Arg Val Asn Gly Ser Cys Glu Asp
305 310 315 320

Val Asp Glu Cys Ala Thr Gly Gly Arg Cys Gln His Gly Glu Cys Ala
325 330 335

Asn Thr Arg Gly Gly Tyr Thr Cys Val Cys Pro Asp Gly Phe Leu Leu
340 345 350

Asp Ser Ser Arg Ser Ser Cys Ile Ser Gln His Val Ile Ser Glu Ala
355 360 365

Lys Gly Pro Cys Phe Arg Val Leu Arg Asp Gly Gly Cys Ser Leu Pro
370 375 380

Ile Leu Arg Asn Ile Thr Lys Gln Ile Cys Cys Cys Ser Arg Val Gly
385 390 395 400

Lys Ala Trp Gly Arg Gly Cys Gln Leu Cys Pro Pro Phe Gly Ser Glu
405 410 415

Gly Phe Arg Glu Ile Cys Pro Ala Gly Pro Gly Tyr His Tyr Ser Ala
420 425 430

Ser Asp Leu Arg Tyr Asn Thr Arg Pro Leu Gly Gln Glu Pro Pro Arg
435 440 445

```
Val Ser Leu Ser Gln Pro Arg Thr Leu Pro Ala Thr Ser Arg Pro Ser
    450                 455                 460

Ala Gly Phe Leu Pro Thr His Arg Leu Glu Pro Arg Pro Glu Pro Arg
465                 470                 475                 480

Pro Asp Pro Arg Pro Gly Pro Glu Leu Pro Leu Pro Ser Ile Pro Ala
                485                 490                 495

Trp Thr Gly Pro Glu Ile Pro Glu Ser Gly Pro Ser Ser Gly Met Cys
            500                 505                 510

Gln Arg Asn Pro Gln Val Cys Gly Pro Gly Arg Cys Ile Ser Arg Pro
        515                 520                 525

Ser Gly Tyr Thr Cys Ala Cys Asp Ser Gly Phe Arg Leu Ser Pro Gln
    530                 535                 540

Gly Thr Arg Cys Ile Asp Val Asp Glu Cys Arg Arg Val Pro Pro Pro
545                 550                 555                 560

Cys Ala Pro Gly Arg Cys Glu Asn Ser Pro Gly Ser Phe Arg Cys Val
                565                 570                 575

Cys Gly Pro Gly Phe Arg Ala Gly Pro Arg Ala Ala Glu Cys Leu Asp
            580                 585                 590

Val Asp Glu Cys His Arg Val Pro Pro Pro Cys Asp Leu Gly Arg Cys
        595                 600                 605

Glu Asn Thr Pro Gly Ser Phe Leu Cys Val Cys Pro Ala Gly Tyr Gln
    610                 615                 620

Ala Ala Pro His Gly Ala Ser Cys Gln Asp Val Asp Glu Cys Thr Gln
625                 630                 635                 640

Ser Pro Gly Leu Cys Gly Arg Gly Gly Cys Lys Asn Leu Pro Gly Ser
                645                 650                 655

Phe Arg Cys Val Cys Pro Ala Gly Phe Arg Gly Ser Ala Cys Glu Glu
            660                 665                 670

Asp Val Asp Glu Cys Ala Gln Glu Pro Pro Pro Cys Gly Pro Gly Arg
        675                 680                 685

Cys Asp Asn Thr Ala Gly Ser Phe His Cys Ala Cys Pro Ala Gly Phe
    690                 695                 700

Arg Ser Arg Gly Pro Gly Ala Pro Cys Gln Asp Val Asp Glu Cys Ala
705                 710                 715                 720

Arg Ser Pro Pro Pro Cys Thr Tyr Gly Arg Cys Glu Asn Thr Glu Gly
                725                 730                 735

Ser Phe Gln Cys Val Cys Pro Met Gly Phe Gln Pro Asn Thr Ala Gly
            740                 745                 750
```

```
Ser Glu Cys Glu Asp Val Asp Glu Cys Glu Asn His Leu Ala Cys Pro
        755                 760                 765

Gly Gln Glu Cys Val Asn Ser Pro Gly Ser Phe Gln Cys Arg Thr Cys
    770                 775                 780

Pro Ser Gly His His Leu His Arg Gly Arg Cys Thr Asp Val Asp Glu
785                 790                 795                 800

Cys Ser Ser Gly Ala Pro Pro Cys Gly Pro His Gly His Cys Thr Asn
                805                 810                 815

Thr Glu Gly Ser Phe Arg Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro
            820                 825                 830

Ser Gly Arg Pro Gly Pro Cys Ala Asp Val Asn Glu Cys Leu Glu Gly
        835                 840                 845

Asp Phe Cys Phe Pro His Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe
    850                 855                 860

Ala Cys Thr Cys Ala Pro Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser
865                 870                 875                 880

Cys Leu Asp Val Asp Glu Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly
                885                 890                 895

Ile Cys Thr Asn Thr Asp Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly
            900                 905                 910

His Arg Ala Gly Pro Asp Leu Ala Ser Cys Leu Asp Val Asp Glu Cys
        915                 920                 925

Arg Glu Arg Gly Pro Ala Leu Cys Gly Ser Gln Arg Cys Glu Asn Ser
    930                 935                 940

Pro Gly Ser Tyr Arg Cys Val Arg Asp Cys Asp Pro Gly Tyr His Ala
945                 950                 955                 960

Gly Pro Glu Gly Thr Cys Asp Asp Val Asp Glu Cys Gln Glu Tyr Gly
                965                 970                 975

Pro Glu Ile Cys Gly Ala Gln Arg Cys Glu Asn Thr Pro Gly Ser Tyr
            980                 985                 990

Arg Cys Thr Pro Ala Cys Asp Pro Gly Tyr Gln Pro Thr Pro Gly Gly
        995                1000                1005

Gly Cys Gln Asp Val Asp Glu Cys Arg Asn Arg Ser Phe Cys Gly Ala
   1010                1015                1020

His Ala Val Cys Gln Asn Leu Pro Gly Ser Phe Gln Cys Leu Cys Asp
1025                1030                1035                1040

Gln Gly Tyr Glu Gly Ala Arg Asp Gly Arg His Cys Val Asp Val Asn
                1045                1050                1055
```

```
Glu Cys Glu Thr Leu Gln Gly Val Cys Gly Ala Ala Leu Cys Glu Asn
          1060                1065                1070

Val Glu Gly Ser Phe Leu Cys Val Cys Pro Asn Ser Pro Glu Glu Phe
       1075                1080                1085

Asp Pro Met Thr Gly Arg Cys Val Pro Pro Arg Thr Ser Val Gly Met
   1090                1095                1100

Ser Pro Gly Ser Gln Pro Gln Ala Pro Val Ser Pro Val Leu Pro Ala
1105                1110                1115                1120

Arg Pro Pro Pro Pro Pro Leu Ser Arg Arg Pro Arg Lys Pro Arg Lys
               1125                1130                1135

Gly Pro Val Gly Ser Gly Cys Arg Glu Cys Tyr Phe Asp Thr Ala Ala
          1140                1145                1150

Pro Asp Ala Cys Asp Asn Ile Leu Ala Arg Asn Val Thr Trp Gln Glu
       1155                1160                1165

Cys Cys Cys Thr Val Gly Glu Gly Trp Gly Ser Gly Cys Arg Ile Gln
   1170                1175                1180

Gln Cys Pro Gly Thr Glu Thr Ala Glu Tyr Gln Ser Leu Cys Pro His
1185                1190                1195                1200

Gly Arg Gly Tyr Leu Ala Pro Ser Gly Asp Leu Ser Leu Arg Arg Asp
               1205                1210                1215

Val Asp Glu Cys Gln Leu Phe Arg Asp Gln Val Cys Lys Ser Gly Val
          1220                1225                1230

Cys Val Asn Thr Ala Pro Gly Tyr Ser Cys Tyr Cys Ser Asn Gly Tyr
       1235                1240                1245

Tyr Tyr His Thr Gln Arg Leu Glu Cys Ile Asp Asn Asp Glu Cys Ala
   1250                1255                1260

Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg Cys Val Asn Thr Val Gly
1265                1270                1275                1280

Ser Tyr His Cys Thr Cys Glu Pro Pro Leu Val Leu Asp Gly Ser Gln
               1285                1290                1295

Arg Arg Cys Val Ser Asn Glu Ser Gln Ser Leu Asp Asp Asn Leu Gly
          1300                1305                1310

Val Cys Trp Gln Glu Val Gly Ala Asp Leu Val Cys Ser His Pro Arg
       1315                1320                1325

Leu Asp Arg Gln Ala Thr Tyr Thr Glu Cys Cys Cys Leu Tyr Gly Glu
   1330                1335                1340

Ala Trp Gly Met Asp Cys Ala Leu Cys Pro Ala Gln Asp Ser Asp Asp
1345                1350                1355                1360
```

Phe Glu Ala Leu Cys Asn Val Leu Arg Pro Pro Ala Tyr Ser Pro Pro
1365 1370 1375

Arg Pro Gly Gly Phe Gly Leu Pro Tyr Glu Tyr Gly Pro Asp Leu Gly
1380 1385 1390

Pro Pro Tyr Gln Gly Leu Pro Tyr Gly Pro Glu Leu Tyr Pro Pro Pro
1395 1400 1405

Ala Leu Pro Tyr Asp Pro Tyr Pro Pro Pro Pro Gly Pro Phe Ala Arg
1410 1415 1420

Arg Glu Ala Pro Tyr Gly Ala Pro Arg Phe Asp Met Pro Asp Phe Glu
1425 1430 1435 1440

Asp Asp Gly Gly Pro Tyr Gly Glu Ser Glu Ala Pro Ala Pro Pro Gly
1445 1450 1455

Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg Asp Thr Arg Arg Ser Phe
1460 1465 1470

Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly Ser Tyr Ala Gly Ser Leu
1475 1480 1485

Ala Glu Pro Tyr Glu Glu Leu Glu Ala Glu Glu Cys Gly Ile Leu Asp
1490 1495 1500

Gly Cys Thr Asn Asp Arg Cys Val Arg Val Pro Glu Gly Phe Thr Cys
1505 1510 1515 1520

Arg Cys Phe Asp Gly Tyr Arg Leu Asp Met Thr Arg Met Ala Cys Val
1525 1530 1535

Asp Ile Asn Glu Cys Asp Glu Ala Glu Ala Ala Ser Pro Leu Cys Val
1540 1545 1550

Asn Ala Arg Cys Leu Asn Thr Asp Gly Ser Phe Arg Cys Ile Cys Arg
1555 1560 1565

Pro Gly Phe Ala Pro Thr His Gln Pro His His Cys Ala Pro Ala Arg
1570 1575 1580

Pro Arg Ala
1585

<210> 78
<211> 775
<212> PRT
<213> Homo sapiens

<400> 78
Met Pro Leu Ala Asn His Arg Asp Asp Glu His Gly Val Ala Ser Met
1 5 10 15

Val Ser Val His Val Glu His Pro Gln Glu Ala Ser Val Val Val His

```
            20                  25                  30

Gln Val Glu Arg Val Ser Gly Pro Trp Glu Glu Ala Asp Ala Glu Ala
        35                  40                  45

Val Ala Arg Ala Glu Ala Ala Ala Arg Ala Glu Ala Ala Ala Pro Tyr
    50                  55                  60

Thr Val Leu Ala Gln Ser Ala Pro Arg Glu Asp Gly Tyr Ser Asp Ala
65                  70                  75                  80

Ser Gly Phe Gly Tyr Cys Phe Arg Glu Leu Arg Gly Gly Glu Cys Ala
                85                  90                  95

Ser Pro Leu Pro Gly Leu Arg Thr Gln Glu Val Cys Cys Arg Gly Ala
            100                 105                 110

Gly Leu Ala Trp Gly Val His Asp Cys Gln Leu Cys Ser Glu Arg Leu
        115                 120                 125

Gly Asn Ser Glu Arg Val Ser Ala Pro Asp Gly Pro Cys Pro Thr Gly
    130                 135                 140

Phe Glu Arg Val Asn Gly Ser Cys Glu Asp Val Asp Glu Cys Ala Thr
145                 150                 155                 160

Gly Gly Arg Cys Gln His Gly Glu Cys Ala Asn Thr Arg Gly Gly Tyr
                165                 170                 175

Thr Cys Val Cys Pro Asp Gly Phe Leu Leu Asp Ser Ser Arg Ser Ser
            180                 185                 190

Cys Ile Ser Gln His Val Ile Ser Glu Ala Lys Gly Pro Cys Phe Arg
        195                 200                 205

Val Leu Arg Asp Gly Gly Cys Ser Leu Pro Ile Leu Arg Asn Ile Thr
    210                 215                 220

Lys Gln Ile Cys Cys Cys Ser Arg Val Gly Lys Ala Trp Gly Arg Gly
225                 230                 235                 240

Cys Gln Leu Cys Pro Pro Phe Gly Ser Glu Gly Phe Arg Glu Ile Cys
                245                 250                 255

Pro Ala Gly Pro Gly Tyr His Tyr Ser Ala Ser Asp Leu Arg Tyr Asn
            260                 265                 270

Thr Arg Pro Leu Gly Gln Glu Pro Pro Arg Val Ser Leu Ser Gln Pro
        275                 280                 285

Arg Thr Leu Pro Ala Thr Ser Arg Pro Ser Ala Gly Phe Leu Pro Thr
    290                 295                 300

His Arg Leu Glu Pro Arg Pro Glu Pro Arg Pro Asp Pro Arg Pro Gly
305                 310                 315                 320

Pro Glu Leu Pro Leu Pro Ser Ile Pro Ala Trp Thr Gly Pro Glu Ile
```

325 330 335

Pro Glu Ser Gly Pro Ser Ser Gly Met Cys Gln Arg Asn Pro Gln Val
340 345 350

Cys Gly Pro Gly Arg Cys Ile Ser Arg Pro Ser Gly Tyr Thr Cys Ala
355 360 365

Cys Asp Ser Gly Phe Arg Leu Ser Pro Gln Gly Thr Arg Cys Ile Asp
370 375 380

Val Asp Glu Cys Arg Arg Val Pro Pro Pro Cys Ala Pro Gly Arg Cys
385 390 395 400

Glu Asn Ser Pro Gly Ser Phe Arg Cys Val Cys Gly Pro Gly Phe Arg
405 410 415

Ala Gly Pro Arg Ala Ala Glu Cys Leu Asp Val Asp Glu Cys His Arg
420 425 430

Val Pro Pro Pro Cys Asp Leu Gly Arg Cys Glu Asn Thr Pro Gly Ser
435 440 445

Phe Leu Cys Val Cys Pro Ala Gly Tyr Gln Ala Ala Pro His Gly Ala
450 455 460

Ser Cys Gln Asp Val Asp Glu Cys Thr Gln Ser Pro Gly Leu Cys Gly
465 470 475 480

Arg Gly Ala Cys Lys Asn Leu Pro Gly Ser Phe Arg Cys Val Cys Pro
485 490 495

Ala Gly Phe Arg Gly Ser Ala Cys Glu Glu Asp Val Asp Glu Cys Ala
500 505 510

Gln Glu Pro Pro Pro Cys Gly Pro Gly Arg Cys Asp Asn Thr Ala Gly
515 520 525

Ser Phe His Cys Ala Cys Pro Ala Gly Phe Arg Ser Arg Gly Pro Gly
530 535 540

Ala Pro Cys Gln Asp Val Asp Glu Cys Ala Arg Ser Pro Pro Pro Cys
545 550 555 560

Thr Tyr Gly Arg Cys Glu Asn Thr Glu Gly Ser Phe Gln Cys Val Cys
565 570 575

Pro Met Gly Phe Gln Pro Asn Thr Ala Gly Ser Glu Cys Glu Asp Val
580 585 590

Asp Glu Cys Glu Asn His Leu Ala Cys Pro Gly Gln Glu Cys Val Asn
595 600 605

Ser Pro Gly Ser Phe Gln Cys Arg Thr Cys Pro Ser Gly His His Leu
610 615 620

His Arg Gly Arg Cys Thr Asp Val Asp Glu Cys Ser Ser Gly Ala Pro

625 630 635 640

Pro Cys Gly Pro His Gly His Cys Thr Asn Thr Glu Gly Ser Phe Arg
645 650 655

Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro Ser Gly Arg Pro Gly Pro
660 665 670

Cys Ala Asp Val Asn Glu Cys Leu Glu Gly Asp Phe Cys Phe Pro His
675 680 685

Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe Ala Cys Thr Cys Ala Pro
690 695 700

Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser Cys Leu Asp Val Asp Glu
705 710 715 720

Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly Ile Cys Thr Asn Thr Asp
725 730 735

Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly His Arg Ala Gly Pro Asp
740 745 750

Leu Ala Ser Cys Leu Gly Arg Gly Arg Met Ser Arg Ala Arg Pro Ser
755 760 765

Pro Val Arg Val Ala Ala Leu
770 775

<210> 79
<211> 669
<212> PRT
<213> Homo sapiens

<400> 79
Arg Gly Pro Met Gly Phe Gln Pro Asn Ala Ala Gly Ser Glu Cys Glu
1 5 10 15

Asp Val Asp Glu Cys Glu Asn His Leu Ala Cys Pro Gly Gln Glu Cys
20 25 30

Val Asn Ser Pro Gly Ser Phe Gln Cys Arg Ala Cys Pro Ser Gly His
35 40 45

His Leu His Arg Gly Arg Cys Thr Asp Val Asp Glu Cys Ser Ser Gly
50 55 60

Ala Pro Pro Cys Gly Pro His Gly His Cys Thr Asn Thr Glu Gly Ser
65 70 75 80

Phe Arg Cys Ser Cys Ala Pro Gly Tyr Arg Ala Pro Ser Gly Arg Pro
85 90 95

Gly Pro Cys Ala Asp Val Asn Glu Cys Leu Glu Gly Asp Phe Cys Phe
100 105 110

```
Pro His Gly Glu Cys Leu Asn Thr Asp Gly Ser Phe Ala Cys Thr Cys
        115                 120                 125

Ala Pro Gly Tyr Arg Pro Gly Pro Arg Gly Ala Ser Cys Leu Asp Val
    130                 135                 140

Asp Glu Cys Ser Glu Glu Asp Leu Cys Gln Ser Gly Ile Cys Thr Asn
145                 150                 155                 160

Thr Asp Gly Ser Phe Glu Cys Ile Cys Pro Pro Gly His Arg Ala Gly
                165                 170                 175

Pro Asp Leu Ala Ser Cys Leu Asp Val Asp Glu Cys Arg Glu Arg Gly
            180                 185                 190

Pro Ala Leu Cys Gly Ser Gln Arg Cys Glu Asn Ser Pro Gly Ser Tyr
        195                 200                 205

Arg Cys Val Arg Asp Cys Asp Pro Gly Tyr His Ala Gly Pro Glu Gly
    210                 215                 220

Thr Cys Asp Asp Val Asn Glu Cys Glu Thr Leu Gln Gly Val Cys Gly
225                 230                 235                 240

Ala Ala Leu Cys Glu Asn Val Glu Gly Ser Phe Leu Cys Val Cys Pro
                245                 250                 255

Asn Ser Pro Glu Glu Phe Asp Pro Met Thr Gly Arg Cys Val Pro Pro
            260                 265                 270

Arg Thr Ser Ala Gly Met Phe Pro Gly Ser Gln Pro Gln Ala Pro Ala
        275                 280                 285

Ser Pro Val Leu Pro Ala Arg Pro Pro Pro Pro Pro Leu Pro Arg Arg
    290                 295                 300

Pro Ser Thr Pro Arg Gln Gly Pro Val Gly Ser Gly Arg Arg Glu Cys
305                 310                 315                 320

Tyr Phe Asp Thr Ala Ala Pro Asp Ala Cys Asp Asn Ile Leu Ala Arg
                325                 330                 335

Asn Val Thr Trp Gln Glu Cys Cys Cys Thr Val Gly Glu Gly Trp Gly
            340                 345                 350

Ser Gly Cys Arg Ile Gln Gln Cys Pro Gly Thr Glu Thr Ala Glu Tyr
        355                 360                 365

Gln Ser Leu Cys Pro His Gly Arg Gly Tyr Leu Ala Pro Ser Gly Asp
    370                 375                 380

Leu Ser Leu Arg Arg Asp Val Asp Glu Cys Gln Leu Phe Arg Asp Gln
385                 390                 395                 400

Val Cys Lys Ser Gly Val Cys Val Asn Thr Ala Pro Gly Tyr Ser Cys
                405                 410                 415
```

```
Tyr Cys Ser Asn Gly Tyr Tyr Tyr His Thr Gln Arg Leu Glu Cys Ile
            420                 425                 430

Asp Asn Asp Glu Cys Ala Asp Glu Glu Pro Ala Cys Glu Gly Gly Arg
        435                 440                 445

Cys Val Asn Thr Val Gly Ser Tyr His Cys Thr Cys Glu Pro Pro Leu
    450                 455                 460

Val Leu Asp Gly Ser Gln Arg Arg Cys Val Ser Asn Glu Ser Gln Ser
465                 470                 475                 480

Leu Asp Asp Asn Leu Gly Val Cys Trp Gln Glu Val Gly Ala Asp Leu
                485                 490                 495

Val Cys Ser His Pro Arg Leu Asp Arg Gln Ala Thr Tyr Thr Glu Cys
            500                 505                 510

Cys Cys Leu Tyr Gly Glu Ala Trp Gly Met Asp Cys Ala Leu Cys Pro
        515                 520                 525

Ala Gln Asp Ser Asp Asp Phe Glu Ala Leu Cys Asn Val Leu Arg Pro
    530                 535                 540

Pro Ala Tyr Ser Pro Pro Arg Pro Gly Gly Phe Gly Leu Pro Tyr Glu
545                 550                 555                 560

Tyr Gly Pro Asp Leu Gly Pro Pro Tyr Gln Gly Leu Pro Tyr Gly Pro
                565                 570                 575

Glu Leu Tyr Pro Pro Pro Ala Leu Pro Tyr Asp Pro Tyr Pro Pro Pro
            580                 585                 590

Pro Gly Pro Phe Ala Arg Arg Glu Ala Pro Tyr Gly Ala Pro Arg Phe
        595                 600                 605

Asp Met Pro Asp Phe Glu Asp Asp Gly Gly Pro Tyr Gly Glu Ser Glu
    610                 615                 620

Ala Pro Ala Pro Pro Gly Pro Gly Thr Arg Trp Pro Tyr Arg Ser Arg
625                 630                 635                 640

Asp Thr Arg Arg Ser Phe Pro Glu Pro Glu Glu Pro Pro Glu Gly Gly
                645                 650                 655

Ser Tyr Ala Gly Ser Leu Ala Glu Pro Arg Ala Glu Phe
            660                 665
```

<210> 80
<211> 321
<212> PRT
<213> Mus musculus

<400> 80

```
Met Asn Ser Thr Leu Asp Ser Ser Pro Ala Pro Gly Leu Thr Ile Ser
  1               5                  10                  15
```

```
Pro Thr Met Asp Leu Val Thr Trp Ile Tyr Phe Ser Val Thr Phe Leu
            20                  25                  30

Ala Met Ala Thr Cys Val Gly Gly Met Ala Gly Asn Ser Leu Val Ile
        35                  40                  45

Trp Leu Leu Ser Cys Asn Gly Met Gln Arg Ser Pro Phe Cys Val Tyr
    50                  55                  60

Val Leu Asn Leu Ala Val Ala Asp Phe Leu Phe Leu Phe Cys Met Ala
65                  70                  75                  80

Ser Met Leu Ser Leu Glu Thr Gly Pro Leu Leu Ile Val Asn Ile Ser
                85                  90                  95

Ala Lys Ile Tyr Glu Gly Met Arg Arg Ile Lys Tyr Phe Ala Tyr Thr
            100                 105                 110

Ala Gly Leu Ser Leu Leu Thr Ala Ile Ser Thr Gln Arg Cys Leu Ser
        115                 120                 125

Val Leu Phe Pro Ile Trp Tyr Lys Cys His Arg Pro Arg His Leu Ser
    130                 135                 140

Ser Val Val Ser Gly Ala Leu Trp Ala Leu Ala Phe Leu Met Asn Phe
145                 150                 155                 160

Leu Ala Ser Phe Phe Cys Val Gln Phe Trp His Pro Asn Lys His Gln
                165                 170                 175

Cys Phe Lys Val Asp Ile Val Phe Asn Ser Leu Ile Leu Gly Ile Phe
            180                 185                 190

Met Pro Val Met Ile Leu Thr Ser Thr Ile Leu Phe Ile Arg Val Arg
        195                 200                 205

Lys Asn Ser Leu Met Gln Arg Arg Arg Pro Arg Arg Leu Tyr Val Val
    210                 215                 220

Ile Leu Thr Ser Ile Leu Val Phe Leu Thr Cys Ser Leu Pro Leu Gly
225                 230                 235                 240

Ile Asn Trp Phe Leu Leu Tyr Trp Val Asp Val Lys Arg Asp Val Arg
                245                 250                 255

Leu Leu Tyr Ser Cys Val Ser Arg Phe Ser Ser Ser Leu Ser Ser Ser
            260                 265                 270

Ala Asn Pro Val Ile Tyr Phe Leu Val Gly Ser Gln Lys Ser His Arg
        275                 280                 285

Leu Gln Glu Ser Leu Gly Ala Val Leu Gly Arg Ala Leu Arg Asp Glu
    290                 295                 300

Pro Glu Pro Glu Gly Arg Glu Thr Pro Ser Thr Cys Thr Asn Asp Gly
305                 310                 315                 320
```

Val

<210> 81
<211> 322
<212> PRT
<213> Homo sapiens

<400> 81
Met Asp Pro Thr Ile Ser Thr Leu Asp Thr Glu Leu Thr Pro Ile Asn
1 5 10 15

Gly Thr Glu Glu Thr Leu Cys Tyr Lys Gln Thr Leu Ser Leu Thr Val
20 25 30

Leu Thr Cys Ile Val Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val
35 40 45

Leu Trp Leu Leu Gly Cys Arg Met Arg Arg Asn Ala Phe Ser Ile Tyr
50 55 60

Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Gly Arg Leu
65 70 75 80

Ile Tyr Ser Leu Leu Ser Phe Ile Ser Ile Pro His Thr Ile Ser Lys
85 90 95

Ile Leu Tyr Pro Val Met Met Phe Ser Tyr Phe Ala Gly Leu Ser Phe
100 105 110

Leu Ser Ala Val Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile
115 120 125

Trp Tyr Arg Cys His Arg Pro Thr His Leu Ser Ala Val Val Cys Val
130 135 140

Leu Leu Trp Ala Leu Ser Leu Leu Arg Ser Ile Leu Glu Trp Met Leu
145 150 155 160

Cys Gly Phe Leu Phe Ser Gly Ala Asp Ser Ala Trp Cys Gln Thr Ser
165 170 175

Asp Phe Ile Thr Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys
180 185 190

Gly Ser Ser Leu Val Leu Leu Ile Arg Ile Leu Cys Gly Ser Arg Lys
195 200 205

Ile Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val
210 215 220

Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln Phe Phe Leu Phe Leu
225 230 235 240

Trp Ile His Val Asp Arg Glu Val Leu Phe Cys His Val His Leu Val

```
                245                 250                 255

Ser Ile Phe Leu Ser Ala Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr
            260                 265                 270

Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys
        275                 280                 285

Leu Val Leu Gln Arg Ala Leu Gln Asp Ala Ser Glu Val Asp Glu Gly
    290                 295                 300

Gly Gly Gln Leu Pro Glu Glu Ile Leu Glu Leu Ser Gly Ser Arg Leu
305                 310                 315                 320

Glu Gln
```

<210> 82
<211> 304
<212> PRT
<213> Homo sapiens

<400> 82

```
Met Asp Asn Thr Ile Pro Gly Gly Ile Asn Ile Thr Ile Leu Ile Pro
  1               5                  10                  15

Asn Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Gly
             20                  25                  30

Ile Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser
         35                  40                  45

Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly
     50                  55                  60

His Ile Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile
 65                  70                  75                  80

Thr Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala
                 85                  90                  95

Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val
            100                 105                 110

Leu Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr
        115                 120                 125

Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu
    130                 135                 140

Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn
145                 150                 155                 160

Gly Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu
                165                 170                 175
```

```
Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe
            180                 185                 190

Cys Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile
        195                 200                 205

Leu Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His
    210                 215                 220

Trp Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu
225                 230                 235                 240

Gly Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala
                245                 250                 255

Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys
            260                 265                 270

His Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro
        275                 280                 285

Glu Thr Ala Lys Ile Met Val Glu Met Ser Arg Ser Lys Ser Glu Pro
    290                 295                 300
```

<210> 83
<211> 321
<212> PRT
<213> Homo sapiens

<400> 83

```
Met Glu Pro Leu Ala Met Thr Leu Tyr Pro Leu Glu Ser Thr Gln Pro
  1               5                  10                  15

Thr Arg Asn Lys Thr Pro Asn Glu Thr Thr Trp Ser Ser Glu His Thr
             20                  25                  30

Asp Asp His Thr Tyr Phe Leu Val Ser Leu Val Ile Cys Ser Leu Gly
         35                  40                  45

Leu Ala Gly Asn Gly Leu Leu Ile Trp Phe Leu Ile Phe Cys Ile Lys
     50                  55                  60

Arg Lys Pro Phe Thr Ile Tyr Ile Leu His Leu Ala Ile Ala Asp Phe
 65                  70                  75                  80

Met Val Leu Leu Cys Ser Ser Ile Met Lys Leu Val Asn Thr Phe His
                 85                  90                  95

Ile Tyr Asn Met Thr Leu Glu Ser Tyr Ala Ile Leu Phe Met Ile Phe
            100                 105                 110

Gly Tyr Asn Thr Gly Leu His Leu Leu Thr Ala Ile Ser Val Glu Arg
        115                 120                 125
```

```
Cys Leu Ser Val Leu Tyr Pro Ile Trp Tyr Gln Cys Gln Arg Pro Lys
    130                 135                 140

His Gln Ser Ala Val Ala Cys Met Leu Leu Trp Ala Leu Ser Val Leu
145                 150                 155                 160

Val Ser Gly Leu Glu Asn Phe Phe Cys Ile Leu Glu Val Lys Pro Gln
                165                 170                 175

Phe Pro Glu Cys Arg Tyr Val Tyr Ile Phe Ser Cys Ile Leu Thr Phe
            180                 185                 190

Leu Val Phe Val Pro Leu Met Ile Phe Ser Asn Leu Ile Leu Phe Ile
        195                 200                 205

Gln Val Cys Cys Asn Leu Lys Pro Arg Gln Pro Thr Lys Leu Tyr Val
    210                 215                 220

Ile Ile Met Thr Thr Val Ile Leu Phe Leu Val Phe Ala Met Pro Met
225                 230                 235                 240

Lys Val Leu Leu Ile Ile Gly Tyr Tyr Ser Ser Ser Leu Asp Asp Ser
                245                 250                 255

Val Trp Asp Ser Leu Pro Tyr Leu Asn Met Leu Ser Thr Ile Asn Cys
            260                 265                 270

Ser Ile Asn Pro Ile Val Tyr Phe Val Val Gly Ser Leu Arg Arg Lys
        275                 280                 285

Arg Ser Arg Lys Ser Leu Lys Glu Ala Leu Gln Lys Val Phe Glu Glu
    290                 295                 300

Lys Pro Val Val Ala Ser Arg Glu Asn Val Thr Gln Phe Ser Leu Pro
305                 310                 315                 320

Ser
```

<210> 84
<211> 322
<212> PRT
<213> Homo sapiens

<400> 84

```
Met Asp Pro Thr Val Pro Val Phe Gly Thr Lys Leu Thr Pro Ile Asn
  1               5                  10                  15

Gly Arg Glu Glu Thr Pro Cys Tyr Asn Gln Thr Leu Ser Phe Thr Val
             20                  25                  30

Leu Thr Cys Ile Ile Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val
         35                  40                  45

Leu Trp Leu Leu Gly Tyr Arg Met Arg Arg Asn Ala Val Ser Ile Tyr
```

```
     50                  55                  60

Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Phe Gln Ile
 65                  70                  75                  80

Ile Arg Ser Pro Leu Arg Leu Ile Asn Ile Ser His Leu Ile Arg Lys
                 85                  90                  95

Ile Leu Val Ser Val Met Thr Phe Pro Tyr Phe Thr Gly Leu Ser Met
            100                 105                 110

Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile
        115                 120                 125

Trp Tyr Arg Cys Arg Arg Pro Thr His Leu Ser Ala Val Val Cys Val
    130                 135                 140

Leu Leu Trp Gly Leu Ser Leu Leu Phe Ser Met Leu Glu Trp Arg Phe
145                 150                 155                 160

Cys Asp Phe Leu Phe Ser Gly Ala Asp Ser Ser Trp Cys Glu Thr Ser
                165                 170                 175

Asp Phe Ile Pro Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys
            180                 185                 190

Val Ser Ser Leu Val Leu Leu Val Arg Ile Leu Cys Gly Ser Arg Lys
        195                 200                 205

Met Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val
    210                 215                 220

Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Leu Gly Ala Leu Ile Tyr
225                 230                 235                 240

Arg Met His Leu Asn Leu Glu Val Leu Tyr Cys His Val Tyr Leu Val
                245                 250                 255

Cys Met Ser Leu Ser Ser Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr
            260                 265                 270

Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys
        275                 280                 285

Leu Val Leu Gln Arg Ala Leu Gln Asp Lys Pro Glu Val Asp Lys Gly
    290                 295                 300

Glu Gly Gln Leu Pro Glu Glu Ser Leu Glu Leu Ser Gly Ser Arg Leu
305                 310                 315                 320

Gly Pro
```

<210> 85
<211> 149
<212> PRT

<213> Mus pahari

<400> 85
Met Gly Leu Glu Lys Ser Leu Ile Leu Phe Pro Leu Phe Val Leu Leu
1 5 10 15

Leu Gly Trp Val Gln Pro Ser Leu Gly Lys Glu Ser Ser Ala Gln Lys
20 25 30

Phe Glu Arg Gln His Met Asp Ser Ser Gly Ser Ser Asn Asn Ser Pro
35 40 45

Thr Tyr Cys Asn Gln Met Met Lys Ser Arg Ser Met Thr Lys Glu Ser
50 55 60

Cys Lys Pro Val Asn Thr Phe Val His Glu Pro Leu Glu Asp Val Gln
65 70 75 80

Ala Ile Cys Ser Gln Glu Asn Val Thr Cys Lys Asn Gly Asn Arg Asn
85 90 95

Cys Tyr Lys Ser Ser Ser Ala Leu His Ile Thr Asp Cys His Leu Lys
100 105 110

Gly Asn Ser Lys Tyr Pro Asn Cys Asn Tyr Asn Thr Asn Gln Tyr Gln
115 120 125

Lys His Ile Ile Val Ala Cys Asp Gly Asn Pro Tyr Val Pro Val His
130 135 140

Leu Asp Ala Thr Val
145

<210> 86
<211> 129
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> (1)
<223> Wherein Xaa is any amino acid as defined in the specification

<400> 86
Xaa Lys Glu Ser Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
1 5 10 15

Gly Asn Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Arg
20 25 30

Arg Arg Asn Met Thr Gln Gly Arg Cys Lys Pro Val Asn Thr Phe Val
35 40 45

His Glu Ser Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val
50 55 60

```
Thr Cys Lys Asn Gly Gln Gly Asn Cys Tyr Lys Ser Asn Ser Ser Met
 65                  70                  75                  80

His Ile Thr Asp Cys Arg Leu Thr Asn Gly Ser Arg Tyr Pro Asn Cys
                 85                  90                  95

Ala Tyr Arg Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu
            100                 105                 110

Gly Ser Pro Tyr Val Pro Val His Phe Asp Ala Ser Val Glu Asp Ser
        115                 120                 125

Thr
```

<210> 87
<211> 208
<212> PRT
<213> Mus musculus

<400> 87

```
Met Lys Val Thr Leu Val His Leu Leu Phe Met Met Leu Leu Leu Leu
  1               5                  10                  15

Leu Gly Leu Gly Leu Gly Leu Gly Leu Gly Leu His Met Ala Ala Ala
            20                  25                  30

Val Leu Glu Asp Gln Pro Leu Asn Glu Phe Trp Pro Ser Asp Ser Gln
         35                  40                  45

Asn Thr Glu Glu Gly Glu Gly Ile Trp Thr Thr Glu Gly Leu Ala Leu
     50                  55                  60

Gly Tyr Lys Glu Met Ala Gln Pro Val Trp Pro Glu Glu Ala Val Leu
 65                  70                  75                  80

Ser Glu Asp Glu Val Gly Gly Ser Arg Met Leu Arg Ala Glu Pro Arg
                 85                  90                  95

Phe Gln Ser Lys Gln Asp Tyr Leu Lys Phe Asp Leu Ser Val Arg Asp
            100                 105                 110

Cys Asn Thr Met Met Ala His Lys Ile Lys Glu Pro Asn Gln Ser Cys
        115                 120                 125

Ile Asn Gln Tyr Thr Phe Ile His Glu Asp Pro Asn Thr Val Lys Ala
    130                 135                 140

Val Cys Asn Gly Ser Leu Val Asp Cys Asp Leu Gln Gly Gly Lys Cys
145                 150                 155                 160

Tyr Lys Ser Pro Arg Pro Phe Asp Leu Thr Leu Cys Lys Leu Ala Lys
                165                 170                 175

Pro Gly Gln Val Thr Pro Asn Cys His Tyr Leu Thr Tyr Ile Thr Glu
```

```
            180                 185                 190

Lys Ser Ile Phe Met Thr Cys Asn Asp Lys Arg Gln Leu Glu Thr Lys
        195                 200                 205
```

<210> 88
<211> 128
<212> PRT
<213> Presbytis entellus

<400> 88

```
Gly Glu Ser Arg Ala Glu Lys Phe Gln Arg Gln His Met Asp Ser Gly
  1               5                  10                  15

Ser Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Lys Leu
             20                  25                  30

Arg Asn Met Thr Gln Gly Ser Cys Lys Ser Val Asn Thr Phe Val His
         35                  40                  45

Glu Pro Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val Thr
     50                  55                  60

Cys Lys Asn Gly Gln Thr Asn Cys Phe Lys Ser Asn Ser Arg Met His
 65                  70                  75                  80

Ile Thr Glu Cys Arg Leu Thr Asn Gly Ser Lys Tyr Pro Asn Cys Ala
                 85                  90                  95

Tyr Gly Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu Gly
            100                 105                 110

Ser Pro Tyr Val Pro Val His Phe Asp Asp Ser Val Glu Asp Ser Thr
        115                 120                 125
```

<210> 89
<211> 119
<212> PRT
<213> Iguana iguana

<400> 89

```
Gln Asp Trp Ser Ser Phe Gln Asn Lys His Ile Asp Tyr Pro Glu Thr
  1               5                  10                  15

Ser Ala Ser Asn Pro Asn Ala Tyr Cys Asp Leu Met Met Gln Arg Arg
             20                  25                  30

Asn Leu Asn Pro Thr Lys Cys Lys Thr Arg Asn Thr Phe Val His Ala
         35                  40                  45
```

```
Ser Pro Ser Glu Ile Gln Gln Val Cys Gly Ser Gly Gly Thr His Tyr
     50                  55                  60

Glu Asp Asn Leu Tyr Asp Ser Asn Glu Ser Phe Asp Leu Thr Asp Cys
 65                  70                  75                  80

Lys Asn Val Gly Gly Thr Ala Pro Ser Ser Cys Lys Tyr Asn Gly Thr
                 85                  90                  95

Pro Gly Thr Lys Arg Ile Arg Ile Ala Cys Glu Asn Asn Gln Pro Val
            100                 105                 110

His Phe Glu Leu Val Leu Ser
        115
```

<210> 90
<211> 493
<212> PRT
<213> Homo sapiens

<400> 90

```
Met Cys Glu Leu Tyr Ser Lys Arg Asp Thr Leu Gly Leu Arg Lys Lys
  1               5                  10                  15

His Ile Gly Pro Ser Cys Lys Val Phe Phe Ala Ser Asp Pro Ile Lys
            20                  25                  30

Ile Val Arg Ala Gln Arg Gln Tyr Met Phe Asp Glu Asn Gly Glu Gln
        35                  40                  45

Tyr Leu Asp Cys Ile Asn Asn Val Ala His Gly Val Val Lys Ala Ala
     50                  55                  60

Leu Lys Gln Met Glu Leu Leu Asn Thr Asn Ser Arg Phe Leu His Asp
 65                  70                  75                  80

Asn Ile Val Glu Tyr Ala Lys Arg Leu Ser Ala Thr Leu Pro Glu Lys
                 85                  90                  95

Leu Ser Val Cys Tyr Phe Thr Asn Ser Gly Ser Glu Ala Asn Asp Leu
            100                 105                 110

Ala Leu Arg Leu Ala Arg Gln Phe Arg Gly His Gln Asp Val Ile Thr
        115                 120                 125

Leu Asp His Ala Tyr His Gly His Leu Ser Ser Leu Ile Glu Ile Ser
    130                 135                 140

Pro Tyr Lys Phe Gln Lys Gly Lys Asp Val Lys Lys Glu Phe Val His
145                 150                 155                 160

Val Ala Pro Thr Pro Asp Thr Tyr Arg Gly Lys Tyr Arg Glu Asp His
                165                 170                 175

Ala Asp Ser Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu
```

```
            180                 185                 190

Asp Ala His Asn Ser Gly Arg Lys Ile Ala Ala Phe Ile Ala Glu Ser
        195                 200                 205

Met Gln Ser Cys Gly Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Gln
    210                 215                 220

Lys Val Ala Glu Tyr Val His Gly Ala Gly Gly Val Phe Ile Ala Asp
225                 230                 235                 240

Glu Val Gln Val Gly Phe Gly Arg Val Gly Lys His Phe Trp Ser Phe
                245                 250                 255

Gln Met Tyr Gly Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys
            260                 265                 270

Pro Met Gly Asn Gly His Pro Val Ala Cys Val Val Thr Thr Lys Glu
        275                 280                 285

Ile Ala Glu Ala Phe Ser Ser Ser Gly Met Glu Tyr Phe Asn Thr Tyr
    290                 295                 300

Gly Gly Asn Pro Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Ile
305                 310                 315                 320

Ile Glu Asn Glu Asp Leu Gln Gly Asn Ala Lys Arg Val Gly Asn Tyr
                325                 330                 335

Leu Thr Glu Leu Leu Lys Lys Gln Lys Ala Lys His Thr Leu Ile Gly
            340                 345                 350

Asp Ile Arg Gly Ile Gly Leu Phe Ile Gly Ile Asp Leu Val Lys Asp
        355                 360                 365

His Leu Lys Arg Thr Pro Ala Thr Ala Glu Ala Gln His Ile Ile Tyr
    370                 375                 380

Lys Met Lys Glu Lys Arg Val Leu Leu Ser Ala Asp Gly Pro His Arg
385                 390                 395                 400

Asn Val Leu Lys Ile Lys Pro Pro Met Cys Phe Thr Glu Glu Asp Ala
                405                 410                 415

Lys Phe Met Val Asp Gln Leu Asp Arg Ile Leu Thr Val Leu Glu Glu
            420                 425                 430

Ala Met Gly Thr Lys Thr Glu Ser Val Thr Ser Glu Asn Thr Pro Cys
        435                 440                 445

Lys Thr Lys Met Leu Lys Glu Ala His Ile Glu Leu Leu Arg Asp Ser
    450                 455                 460

Thr Thr Asp Ser Lys Glu Asn Pro Ser Arg Lys Arg Asn Gly Met Cys
465                 470                 475                 480

Thr Asp Thr His Ser Leu Leu Ser Lys Arg Leu Lys Thr
```

485 490

<210> 91
<211> 499
<212> PRT
<213> Mus musculus

<400> 91
Met Cys Glu Leu Tyr Ser Lys Gln Asp Thr Leu Ala Leu Arg Glu Arg
1 5 10 15

His Ile Gly Pro Ser Cys Lys Ile Phe Phe Ala Ala Asp Pro Ile Lys
20 25 30

Ile Met Arg Ala Gln Gly Gln Tyr Met Phe Asp Glu Lys Gly Glu Arg
35 40 45

Tyr Leu Asp Cys Ile Asn Asn Val Ala His Val Gly His Cys His Pro
50 55 60

Glu Val Val Lys Ala Ala Ala Lys Gln Met Glu Leu Leu Asn Thr Asn
65 70 75 80

Ser Arg Phe Leu His Asp Asn Ile Ile Glu Phe Ala Lys Arg Leu Thr
85 90 95

Ala Thr Leu Pro Gln Glu Leu Ser Val Cys Tyr Phe Thr Asn Ser Gly
100 105 110

Ser Glu Ala Asn Asp Leu Ala Leu Arg Leu Ala Arg Gln Phe Arg Gly
115 120 125

His Gln Asp Val Ile Thr Leu Asp His Ala Tyr His Gly His Leu Ser
130 135 140

Ser Leu Ile Glu Ile Ser Pro Tyr Lys Phe Gln Lys Gly Lys Asp Val
145 150 155 160

Lys Arg Glu Thr Val His Val Ala Pro Ala Pro Asp Thr Tyr Arg Gly
165 170 175

Lys Tyr Arg Glu Asp His Glu Asp Pro Ser Thr Ala Tyr Ala Asp Glu
180 185 190

Val Lys Lys Ile Ile Glu Glu Ala His Ser Ser Gly Arg Lys Ile Ala
195 200 205

Ala Phe Ile Ala Glu Ser Met Gln Ser Cys Gly Gly Gln Ile Ile Pro
210 215 220

Pro Ala Gly Tyr Phe Gln Lys Val Ala Glu His Ile His Lys Ala Gly
225 230 235 240

Gly Val Phe Ile Ala Asp Glu Val Gln Val Gly Phe Gly Arg Val Gly
245 250 255

```
Arg Tyr Phe Trp Ser Phe Gln Met Tyr Gly Glu Asp Phe Val Pro Asp
            260                 265                 270

Ile Val Thr Met Gly Lys Pro Met Gly Asp Gly His Pro Ile Ser Cys
        275                 280                 285

Val Val Thr Thr Lys Glu Ile Ala Glu Ala Phe Ser Ser Ser Gly Met
    290                 295                 300

Glu Tyr Phe Asn Thr Tyr Gly Gly Asn Pro Val Ser Cys Ala Val Gly
305                 310                 315                 320

Leu Ala Val Leu Asp Val Ile Glu Lys Glu Asn Leu Gln Gly Asn Ala
                325                 330                 335

Val Arg Val Gly Thr Tyr Leu Met Glu Leu Leu Ser Glu Gln Lys Ala
            340                 345                 350

Lys His Pro Leu Ile Gly Asp Ile Arg Gly Val Gly Leu Phe Ile Gly
        355                 360                 365

Ile Asp Leu Val Lys Asp Arg Glu Lys Arg Thr Pro Ala Thr Ala Glu
    370                 375                 380

Ala Gln His Ile Ile Tyr Glu Met Lys Gly Lys Gly Val Leu Leu Ser
385                 390                 395                 400

Ala Asp Gly Pro His Arg Asn Val Leu Lys Ile Lys Pro Pro Met Cys
                405                 410                 415

Phe Thr Glu Asp Asp Ala Lys Phe Leu Val Asp His Leu Asp Gly Ile
            420                 425                 430

Leu Thr Val Leu Glu Glu Ala Met Asp Ser Lys Ser Gly Thr Val Phe
        435                 440                 445

Ser Glu Asn Thr Ala Tyr Arg Thr Lys Met Pro Lys Glu Ile Gln Val
    450                 455                 460

Glu Leu Pro Asn Leu Ser Ala Thr Glu Ala Arg Glu Ile Pro Arg Gly
465                 470                 475                 480

Lys Arg Asn Gly Val Cys Ser Asp Gln Gln Ala Leu Leu Ser Lys Arg
                485                 490                 495

Leu Lys Thr
```

<210> 92
<211> 426
<212> PRT
<213> Homo sapiens

<400> 92

```
Met Glu Leu Leu Asn Thr Asn Ser Arg Phe Leu His Asp Asn Ile Val
  1               5                  10                  15
```

```
Glu Tyr Ala Lys Arg Leu Ser Ala Thr Leu Pro Glu Lys Leu Ser Val
            20                  25                  30

Cys Tyr Phe Thr Asn Ser Gly Ser Glu Ala Asn Asp Leu Ala Leu Arg
        35                  40                  45

Leu Ala Arg Gln Phe Arg Gly His Gln Asp Val Ile Thr Leu Asp His
    50                  55                  60

Ala Tyr His Gly His Leu Ser Ser Leu Ile Glu Ile Ser Pro Tyr Lys
65                  70                  75                  80

Phe Gln Lys Gly Lys Asp Val Lys Lys Glu Phe Val His Val Ala Pro
                85                  90                  95

Thr Pro Asp Thr Tyr Arg Gly Lys Tyr Arg Glu Asp His Ala Asp Ser
            100                 105                 110

Ala Ser Ala Tyr Ala Asp Glu Val Lys Lys Ile Ile Glu Asp Ala His
        115                 120                 125

Asn Ser Gly Arg Lys Ile Ala Ala Phe Ile Ala Glu Ser Met Gln Ser
    130                 135                 140

Cys Gly Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Gln Lys Val Ala
145                 150                 155                 160

Glu Tyr Val His Gly Ala Gly Gly Val Phe Ile Ala Asp Glu Val Gln
                165                 170                 175

Val Gly Phe Gly Arg Val Gly Lys His Phe Trp Ser Phe Gln Met Tyr
            180                 185                 190

Gly Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys Pro Met Gly
        195                 200                 205

Asn Gly His Pro Val Ala Cys Val Val Thr Thr Lys Glu Ile Ala Glu
    210                 215                 220

Ala Phe Ser Ser Ser Gly Met Glu Tyr Phe Asn Thr Tyr Gly Gly Asn
225                 230                 235                 240

Pro Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Ile Ile Glu Asn
                245                 250                 255

Glu Asp Leu Gln Gly Asn Ala Lys Arg Val Gly Asn Tyr Leu Thr Glu
            260                 265                 270

Leu Leu Lys Lys Gln Lys Ala Lys His Thr Leu Ile Gly Asp Ile Arg
        275                 280                 285

Gly Ile Gly Leu Phe Ile Gly Ile Asp Leu Val Lys Asp His Leu Lys
    290                 295                 300

Arg Thr Pro Ala Thr Ala Glu Ala Gln His Ile Ile Tyr Lys Met Lys
305                 310                 315                 320
```

```
Glu Lys Arg Val Leu Leu Ser Ala Asp Gly Pro His Arg Asn Val Leu
                325                 330                 335

Lys Ile Lys Pro Pro Met Cys Phe Thr Glu Glu Asp Ala Lys Phe Met
            340                 345                 350

Val Asp Gln Leu Asp Arg Ile Leu Thr Val Leu Glu Glu Ala Met Gly
        355                 360                 365

Thr Lys Thr Glu Ser Val Thr Ser Glu Asn Thr Pro Cys Lys Thr Lys
    370                 375                 380

Met Leu Lys Glu Ala His Ile Glu Leu Leu Arg Asp Ser Thr Thr Asp
385                 390                 395                 400

Ser Lys Glu Asn Pro Ser Arg Lys Arg Asn Gly Met Cys Thr Asp Thr
                405                 410                 415

His Ser Leu Leu Ser Lys Arg Leu Lys Thr
            420                 425
```

<210> 93
<211> 473
<212> PRT
<213> Mus musculus

<400> 93

```
Thr Arg Thr Ala Arg Arg His Gly Arg Gly His Gly Ala Lys Ala Val
  1               5                  10                  15

Thr Leu Asp Leu Arg Arg Arg Leu Leu Ser Ser Ser Cys Arg Leu Phe
             20                  25                  30

Phe Pro Glu Asp Pro Val Lys Ile Ile Arg Gly Gln Gly Gln Tyr Leu
         35                  40                  45

Tyr Asp Glu Gln Gly Arg Glu Tyr Leu Asp Cys Ile Asn Asn Val Ala
     50                  55                  60

His Val Gly His Cys His Pro Thr Val Val Gln Ala Ala His Glu Gln
 65                  70                  75                  80

Asn Leu Val Leu Asn Thr Asn Ser Arg Tyr Leu His Gly Asn Ile Val
                 85                  90                  95

Asp Tyr Ala Gln Arg Leu Ser Glu Thr Leu Pro Glu Gln Leu Ser Val
            100                 105                 110

Phe Tyr Phe Leu Asn Ser Gly Ser Glu Ala Asn Asp Leu Ala Leu Arg
        115                 120                 125

Leu Ala Arg Gln Tyr Thr Gly His Gln Asp Val Val Val Leu Asp His
    130                 135                 140

Ala Tyr His Gly His Leu Ser Ser Leu Ile Asp Ile Ser Pro Tyr Lys
```

```
145                 150                 155                 160

Phe Arg Asn Leu Gly Gly Gln Lys Glu Trp Val His Val Ala Pro Leu
                165                 170                 175

Pro Asp Thr Tyr Arg Gly Pro Tyr Arg Glu Asp His Pro Asn Pro Ala
            180                 185                 190

Glu Ala Tyr Ala Asn Glu Val Lys His Val Ile Ser Ser Ala Gln Gln
        195                 200                 205

Lys Gly Arg Lys Ile Ala Ala Phe Phe Ala Glu Ser Leu Pro Ser Val
    210                 215                 220

Ser Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Ser Gln Val Ala Glu
225                 230                 235                 240

His Ile His Arg Ala Gly Gly Leu Phe Val Ala Asp Glu Ile Gln Val
                245                 250                 255

Gly Phe Gly Arg Ile Gly Lys His Phe Trp Ala Phe Gln Leu Glu Gly
            260                 265                 270

Glu Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys Ser Ile Gly Asn
        275                 280                 285

Gly His Pro Val Ala Cys Met Ala Thr Thr Gln Ala Val Ser Arg Ala
    290                 295                 300

Phe Glu Ala Thr Gly Val Glu Tyr Phe Asn Thr Phe Gly Gly Asn Pro
305                 310                 315                 320

Val Ser Cys Ala Val Gly Leu Ala Val Leu Asp Val Leu Lys Thr Glu
                325                 330                 335

Gln Leu Gln Ala His Ala Thr Asn Val Gly Ser Phe Leu Leu Glu His
            340                 345                 350

Leu Thr Gln Gln Lys Ala Lys His Pro Ile Ile Gly Asp Val Arg Gly
        355                 360                 365

Thr Gly Leu Phe Ile Gly Val Asp Leu Ile Lys Asp Glu Thr Leu Arg
    370                 375                 380

Thr Pro Ala Thr Glu Glu Ala Glu Tyr Leu Val Ser Arg Leu Lys Glu
385                 390                 395                 400

Asn Tyr Ile Leu Leu Ser Ile Asp Gly Pro Gly Lys Asn Ile Leu Lys
                405                 410                 415

Phe Lys Pro Pro Met Cys Phe Asn Val Asp Asn Ala Gln His Val Val
            420                 425                 430

Ala Lys Leu Asp Asp Ile Leu Thr Asp Met Glu Glu Lys Val Arg Ser
        435                 440                 445

Cys Glu Thr Leu Arg Ile Lys His Pro Pro Glu Asp Thr His Pro Thr
```

```
    450                 455                 460

Gln Ile Leu Leu Thr Arg Gln Gln Asp
465                 470


<210> 94
<211> 494
<212> PRT
<213> Drosophila melanogaster

<400> 94
Met Pro Phe Ala His Glu Gln Leu Asn Leu Val Ala Ser Glu Gln Leu
  1               5                  10                  15

Ser Lys Thr Glu Thr Ile Lys Leu Arg Asn Gln His Ile Gly Gln Ala
             20                  25                  30

Cys Gln Leu Phe Tyr Arg Ser Asp Pro Leu Lys Ile Val Arg Gly Gln
         35                  40                  45

Gly Gln Tyr Met Phe Asp Glu Glu Gly Thr Arg Tyr Leu Asp Cys Ile
     50                  55                  60

Asn Asn Val Ala His Val Gly His Cys His Pro Glu Val Val Arg Ala
 65                  70                  75                  80

Gly Ala Leu Gln Met Ala Thr Ile Ser Thr Asn Asn Arg Phe Leu His
                 85                  90                  95

Asp Glu Leu Val Gln Cys Ala Arg Thr Leu Thr Ser Lys Met Pro Glu
            100                 105                 110

Pro Leu Ser Val Cys Phe Phe Val Asn Ser Gly Ser Glu Ala Asn Asp
        115                 120                 125

Leu Ala Leu Arg Leu Ala Arg Asn Phe Thr Lys Arg Gln Asp Val Ile
    130                 135                 140

Thr Leu Asp His Ala Tyr His Gly His Leu Gln Ser Val Met Glu Val
145                 150                 155                 160

Ser Pro Tyr Lys Phe Asn Gln Pro Gly Gly Glu Ala Lys Pro Asp Tyr
                165                 170                 175

Val His Val Ala Pro Cys Pro Asp Val Tyr Gly Gly Lys Phe Thr Asp
            180                 185                 190

Lys Met Tyr Pro Asp Ala Asp Met Gly Ala Leu Tyr Ala Gln Pro Ile
        195                 200                 205

Glu Glu Ile Cys Gln Lys Gln Leu Ala Lys Gly Gln Gly Val Ala Ala
    210                 215                 220

Phe Ile Ala Glu Ser Leu Gln Ser Cys Gly Gly Gln Ile Leu Pro Pro
225                 230                 235                 240
```

```
Ala Gly Tyr Phe Gln Ala Val Tyr Asp Ala Val Arg Ser Ala Gly Gly
                245                 250                 255

Val Cys Ile Ala Asp Glu Val Gln Val Gly Phe Gly Arg Val Gly Ser
            260                 265                 270

His Tyr Trp Ala Phe Glu Thr Gln Asn Val Ile Pro Asp Ile Val Cys
        275                 280                 285

Val Ala Lys Pro Met Gly Asn Gly His Pro Val Gly Ala Val Val Thr
    290                 295                 300

Thr Pro Glu Ile Ala Gln Ala Phe His Ala Thr Gly Val Ala Tyr Phe
305                 310                 315                 320

Asn Thr Tyr Gly Gly Asn Pro Val Ser Cys Ala Ile Ala Asn Ala Val
                325                 330                 335

Met Arg Val Ile Glu Glu Glu Gly Leu Gln Gln Lys Ala Leu Val Leu
            340                 345                 350

Gly Asp Tyr Leu Leu Glu Glu Cys Asn Arg Leu Lys Gln Glu Phe Glu
        355                 360                 365

Cys Ile Gly Asp Val Arg Gly Ala Gly Leu Phe Val Gly Ile Glu Leu
    370                 375                 380

Val Gln Asp Arg Lys Glu Arg Ile Pro Asp Lys Lys Ala Ala His Trp
385                 390                 395                 400

Val Val Asn Arg Met Lys Gln Leu His Arg Val Leu Val Ser Ser Asp
                405                 410                 415

Gly Pro Asn Asp Asn Val Ile Lys Leu Lys Pro Pro Met Cys Phe Asn
            420                 425                 430

Arg Glu Asn Ala Asp Glu Phe Leu Leu Gly Phe Arg Glu Cys Leu Thr
        435                 440                 445

Ala Val Met Gln Glu Arg Leu Ala Ser Ala Thr Ser Ala Ala Met Ala
    450                 455                 460

Ala Thr Ser Gly Val Ile Ala Thr Ala Thr Glu Thr Leu Ala Asn Lys
465                 470                 475                 480

Thr Lys Leu Phe Glu Arg Gln Asp Arg Leu Ile Lys Ser Val
                485                 490


<210> 95
<211> 1013
<212> PRT
<213> Mus musculus

<400> 95
Met Gly Leu Gln Ala Leu Ser Pro Arg Met Leu Leu Trp Leu Val Val
  1               5                  10                  15
```

```
Ser Gly Ile Val Phe Ser Arg Val Leu Trp Val Cys Ala Gly Leu Asp
            20                  25                  30

Tyr Asp Tyr Thr Phe Asp Gly Asn Glu Glu Asp Lys Thr Glu Pro Ile
        35                  40                  45

Asp Tyr Lys Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp Ile Ala
    50                  55                  60

Leu Asp Asp Glu Asp Leu Asn Ile Phe Gln Ile Asp Arg Thr Ile Asp
65                  70                  75                  80

Leu Thr Gln Ser Pro Phe Gly Lys Leu Gly His Ile Thr Gly Gly Phe
                85                  90                  95

Gly Asp His Gly Met Pro Lys Lys Arg Gly Ala Leu Tyr Gln Leu Ile
            100                 105                 110

Glu Arg Ile Arg Arg Ile Gly Ser Gly Leu Glu Gln Asn Asn Thr Met
        115                 120                 125

Lys Gly Lys Ala Pro Pro Lys Leu Ser Glu Gln Ser Glu Lys Asn Arg
    130                 135                 140

Val Pro Arg Ala Ala Thr Ser Arg Thr Glu Arg Ile Trp Pro Gly Gly
145                 150                 155                 160

Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln Arg Ala
                165                 170                 175

Met Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys Val Thr
            180                 185                 190

Phe Thr Glu Arg Ser Asp Glu Glu Ser Tyr Ile Val Phe Thr Tyr Arg
        195                 200                 205

Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Asn Gly Pro Gln
    210                 215                 220

Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val Val His
225                 230                 235                 240

Glu Leu Gly His Val Ile Gly Phe Trp His Glu His Thr Arg Pro Asp
                245                 250                 255

Arg Asp Asn His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro Gly Gln
            260                 265                 270

Glu Tyr Asn Phe Leu Lys Met Glu Pro Gly Glu Val Asn Ser Leu Gly
        275                 280                 285

Glu Arg Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn Thr Phe
    290                 295                 300

Ser Arg Gly Met Phe Leu Asp Thr Ile Leu Pro Ser Arg Asp Asp Asn
305                 310                 315                 320
```

```
Gly Ile Arg Pro Ala Ile Gly Gln Arg Thr Arg Leu Ser Lys Gly Asp
                325                 330                 335

Ile Ala Gln Ala Arg Lys Leu Tyr Arg Cys Pro Ala Cys Gly Glu Thr
            340                 345                 350

Leu Gln Glu Ser Ser Gly Asn Leu Ser Ser Pro Gly Phe Pro Asn Gly
        355                 360                 365

Tyr Pro Ser Tyr Thr His Cys Ile Trp Arg Val Ser Val Thr Pro Gly
    370                 375                 380

Glu Lys Ile Val Leu Asn Phe Thr Thr Met Asp Leu Tyr Lys Ser Ser
385                 390                 395                 400

Leu Cys Trp Tyr Asp Tyr Ile Glu Val Arg Asp Gly Tyr Trp Arg Lys
                405                 410                 415

Ser Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Val Ala Gly Val Leu
            420                 425                 430

Thr Ser Thr Asp Ser Arg Met Trp Ile Glu Phe Arg Ser Ser Ser Asn
        435                 440                 445

Trp Val Gly Lys Gly Phe Ala Ala Val Tyr Glu Ala Ile Cys Gly Gly
    450                 455                 460

Glu Ile Arg Lys Asn Glu Gly Gln Ile Gln Ser Pro Asn Tyr Pro Asp
465                 470                 475                 480

Asp Tyr Arg Pro Met Lys Glu Cys Val Trp Lys Ile Met Val Ser Glu
                485                 490                 495

Gly Tyr His Val Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu Arg His
            500                 505                 510

Asp Ser Cys Ala Tyr Asp His Leu Glu Val Arg Asp Gly Ala Ser Glu
        515                 520                 525

Asn Ser Pro Leu Ile Gly Arg Phe Cys Gly Tyr Asp Lys Pro Glu Asp
    530                 535                 540

Ile Arg Ser Thr Ser Asn Thr Leu Trp Met Lys Phe Val Ser Asp Gly
545                 550                 555                 560

Thr Val Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu Glu Asp
                565                 570                 575

Glu Cys Ala Lys Pro Asp Arg Gly Gly Cys Glu Gln Arg Cys Leu Asn
            580                 585                 590

Thr Leu Gly Ser Tyr Gln Cys Ala Cys Glu Pro Gly Tyr Glu Leu Gly
        595                 600                 605

Pro Asp Arg Arg Ser Cys Glu Ala Ala Cys Gly Gly Leu Leu Thr Lys
    610                 615                 620
```

```
Leu Asn Gly Thr Ile Thr Thr Pro Gly Trp Pro Lys Glu Tyr Pro Pro
625                 630                 635                 640

Asn Lys Asn Cys Val Trp Gln Val Ile Ala Pro Ser Gln Tyr Arg Ile
                645                 650                 655

Ser Val Lys Phe Glu Phe Phe Glu Leu Glu Gly Asn Glu Val Cys Lys
            660                 665                 670

Tyr Asp Tyr Val Glu Ile Trp Ser Gly Pro Ser Ser Glu Ser Lys Leu
        675                 680                 685

His Gly Lys Phe Cys Gly Ala Asp Ile Pro Glu Val Met Thr Ser His
    690                 695                 700

Phe Asn Asn Met Arg Ile Glu Phe Lys Ser Asp Asn Thr Val Ser Lys
705                 710                 715                 720

Lys Gly Phe Lys Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ser Lys
                725                 730                 735

Asp Asn Gly Gly Cys Gln His Glu Cys Val Asn Thr Met Gly Ser Tyr
            740                 745                 750

Thr Cys Gln Cys Arg Asn Gly Phe Val Leu His Glu Asn Lys His Asp
        755                 760                 765

Cys Lys Glu Ala Glu Cys Glu Gln Lys Ile His Ser Pro Ser Gly Leu
    770                 775                 780

Ile Thr Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Lys Glu Cys
785                 790                 795                 800

Thr Trp Val Ile Ser Ala Ile Pro Gly His Arg Ile Thr Leu Ala Phe
                805                 810                 815

Asn Glu Phe Glu Val Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu
            820                 825                 830

Glu Ile Phe Asp Gly Glu Thr Glu Lys Ser Pro Ile Leu Gly Arg Leu
        835                 840                 845

Cys Gly Ser Lys Ile Pro Asp Pro Leu Met Ala Thr Gly Asn Glu Met
    850                 855                 860

Phe Ile Arg Phe Ile Ser Asp Ala Ser Val Gln Arg Lys Gly Phe Gln
865                 870                 875                 880

Ala Thr His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu Ser Lys
                885                 890                 895

Pro Arg Asp Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn Tyr Pro
            900                 905                 910

Gly Gln Leu Asp Cys Glu Trp Leu Leu Val Ser Glu Arg Gly Ser Arg
        915                 920                 925
```

```
Leu Glu Leu Ser Phe Gln Thr Phe Glu Val Glu Glu Glu Ala Asp Cys
    930                 935                 940

Gly Tyr Asp Tyr Val Glu Val Phe Asp Gly Leu Ser Ser Lys Ala Val
945                 950                 955                 960

Gly Leu Gly Arg Phe Cys Gly Ser Gly Pro Pro Glu Glu Ile Tyr Ser
                965                 970                 975

Ile Gly Asp Val Ala Leu Ile His Phe His Thr Asp Asp Thr Ile Asn
            980                 985                 990

Lys Lys Gly Phe Tyr Ile Arg Tyr Lys Ser Ile Arg Tyr Pro Glu Thr
        995                1000                1005

Met His Ala Lys Asn
   1010


<210> 96
<211> 1012
<212> PRT
<213> Mus musculus

<400> 96
Met Pro Leu Ala Thr Thr Leu Gly Thr Leu Val Leu Leu Leu Leu Leu
  1               5                  10                  15

Pro Leu Pro Arg Gly Ala Glu Val Thr Gly Asp His Ser Asn Val Ala
             20                  25                  30

Leu Asp Tyr Gly Ala Leu Glu Gly Glu Glu Gly Thr Glu Gln Gln Leu
         35                  40                  45

His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp Ile Ala
     50                  55                  60

Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala Glu Asp
 65                  70                  75                  80

Trp Thr Lys Pro Ser Ile Asp Lys Pro Gly His Asp Thr Gly Gly Leu
                 85                  90                  95

Glu Glu Thr Ser Ala Arg Trp Pro Asn Asp Thr Ala Ser Asn Ala Ser
            100                 105                 110

Ile Gln Ala Pro Arg Lys Asp Gly Lys Asp Ala Thr Thr Phe Leu Pro
        115                 120                 125

Asn Pro Gly Thr Ser Asn Thr Thr Ala Lys Thr Phe Ser Ala Arg Val
    130                 135                 140

Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro Gly Gly Val
145                 150                 155                 160

Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Thr Gln Arg Ala Ile
```

```
                165                 170                 175

Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys Val Thr Phe
            180                 185                 190

Val Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser Tyr Arg Thr
        195                 200                 205

Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly Pro Gln Ala
    210                 215                 220

Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val Ala His Glu
225                 230                 235                 240

Leu Gly His Val Val Gly Phe Trp His Glu His Thr Arg Pro Asp Arg
                245                 250                 255

Asp Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro Gly Gln Glu
            260                 265                 270

Tyr Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser Leu Gly Glu
        275                 280                 285

Thr Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn Thr Phe Ser
    290                 295                 300

Arg Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Arg Asp Asp Asn Gly
305                 310                 315                 320

Val Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln Gly Asp Ile
                325                 330                 335

Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro Ala Cys Gly Glu Thr Leu
            340                 345                 350

Gln Asp Thr Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro Asn Gly Tyr
        355                 360                 365

Pro Ser Tyr Ser His Cys Val Trp Arg Ile Ser Val Thr Pro Gly Glu
    370                 375                 380

Lys Ile Ile Leu Asn Phe Thr Ser Met Asp Leu Phe Lys Ser Arg Leu
385                 390                 395                 400

Cys Trp Tyr Asp Tyr Val Glu Ile Arg Asp Gly Tyr Trp Arg Lys Ala
                405                 410                 415

Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu Ser Leu Val
            420                 425                 430

Ser Ser Asp Ser Arg Leu Trp Val Glu Phe Arg Ser Ser Ser Ser Ser
        435                 440                 445

Leu Gly Lys Gly Phe Phe Ala Val Tyr Glu Ala Met Cys Gly Gly Asp
    450                 455                 460

Ile Thr Lys Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr Pro Asp Asp
```

```
465                 470                 475                 480

Tyr Arg Pro Ser Lys Glu Cys Val Trp Arg Ile Thr Val Pro Asp Gly
                485                 490                 495

Phe His Val Gly Leu Thr Phe Gln Ser Phe Glu Ile Glu Arg His Asp
            500                 505                 510

Ser Cys Ala Tyr Asp Tyr Leu Glu Ile Arg Asp Gly Pro Thr Glu Asp
        515                 520                 525

Ser Thr Leu Ile Gly His Phe Cys Gly Tyr Glu Lys Pro Glu Ala Val
    530                 535                 540

Lys Ser Ser Ala Asn Arg Leu Trp Val Lys Phe Val Ser Asp Gly Ser
545                 550                 555                 560

Ile Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu Val Asp Glu
                565                 570                 575

Cys Ser Trp Pro Asp His Gly Gly Cys Glu Gln Arg Cys Val Asn Thr
            580                 585                 590

Leu Gly Ser Tyr Thr Cys Ala Cys Asp Pro Gly Tyr Glu Leu Ala Ala
        595                 600                 605

Asp Lys Lys Thr Cys Glu Val Ala Cys Gly Gly Phe Ile Thr Lys Leu
    610                 615                 620

Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr Pro Thr Asn
625                 630                 635                 640

Lys Asn Cys Val Trp Gln Val Val Ala Pro Val Gln Tyr Arg Ile Ser
                645                 650                 655

Leu Gln Phe Glu Ala Phe Glu Leu Glu Gly Asn Asp Val Cys Lys Tyr
            660                 665                 670

Asp Phe Val Glu Val Arg Ser Gly Leu Ser Pro Asp Ala Lys Leu His
        675                 680                 685

Gly Lys Phe Cys Gly Ser Glu Thr Pro Glu Val Ile Thr Ser Gln Ser
    690                 695                 700

Asn Asn Met Arg Val Glu Phe Lys Ser Asp Asn Thr Val Ser Lys Arg
705                 710                 715                 720

Gly Phe Arg Ala His Phe Phe Ser Asp Lys Asp Glu Cys Ala Lys Asp
                725                 730                 735

Asn Gly Gly Cys Gln Gln Glu Cys Val Asn Thr Phe Gly Ser Tyr Leu
            740                 745                 750

Cys Arg Cys Arg Asn Gly Tyr Arg Leu His Glu Asn Gly His Asp Cys
        755                 760                 765

Lys Glu Ala Gly Cys Ala Tyr Lys Ile Ser Ser Ala Glu Gly Thr Leu
```

```
    770                 775                 780

Met Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Lys Glu Cys Thr
785                 790                 795                 800

Trp Asn Ile Ser Ser Thr Ala Gly His Arg Val Lys Ile Thr Phe Ser
                805                 810                 815

Glu Phe Glu Ile Glu Gln His Gln Glu Cys Ala Tyr Asp His Leu Glu
            820                 825                 830

Leu Tyr Asp Gly Thr Asp Ser Leu Ala Pro Ile Leu Gly Arg Phe Cys
        835                 840                 845

Gly Ser Lys Lys Pro Asp Pro Val Val Ala Thr Gly Ser Ser Leu Phe
    850                 855                 860

Leu Arg Phe Tyr Ser Asp Ala Ser Val Gln Arg Lys Gly Phe Gln Ala
865                 870                 875                 880

Val His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu Val Gln Thr
                885                 890                 895

Lys Glu Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn Tyr Pro Ser
            900                 905                 910

Gln Ala Arg Cys Asp Trp Val Ile Val Ala Glu Asp Gly Tyr Gly Val
        915                 920                 925

Glu Leu Ile Phe Arg Thr Phe Glu Val Glu Glu Glu Ala Asp Cys Gly
    930                 935                 940

Tyr Asp Phe Met Glu Ala Tyr Asp Gly Tyr Asp Ser Ser Ala Pro Arg
945                 950                 955                 960

Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu Glu Glu Ile Tyr Ser Ala
                965                 970                 975

Gly Asp Ser Leu Met Ile Arg Phe His Thr Asp Asp Thr Ile Asn Lys
            980                 985                 990

Lys Gly Phe His Ala Arg Tyr Thr Ser Thr Lys Phe Gln Asp Ala Leu
        995                1000                1005

His Met Arg Lys
   1010


<210> 97
<211> 1015
<212> PRT
<213> Homo sapiens

<400> 97
Met Pro Arg Ala Thr Ala Leu Gly Ala Leu Val Ser Leu Leu Leu Leu
  1               5                  10                  15
```

```
Leu Pro Leu Pro Arg Gly Ala Gly Gly Leu Gly Glu Arg Pro Asp Ala
            20                  25                  30

Thr Ala Asp Tyr Ser Glu Leu Asp Gly Glu Glu Gly Thr Glu Gln Gln
        35                  40                  45

Leu Glu His Tyr His Asp Pro Cys Lys Ala Ala Val Phe Trp Gly Asp
    50                  55                  60

Ile Ala Leu Asp Glu Asp Asp Leu Lys Leu Phe His Ile Asp Lys Ala
65                  70                  75                  80

Arg Asp Trp Thr Lys Gln Thr Val Gly Ala Thr Gly His Ser Thr Gly
                85                  90                  95

Gly Leu Glu Glu Gln Ala Ser Glu Ser Ser Pro Asp Thr Thr Ala Met
            100                 105                 110

Asp Thr Gly Thr Lys Glu Ala Gly Lys Asp Gly Arg Glu Asn Thr Thr
        115                 120                 125

Leu Leu His Ser Pro Gly Thr Leu His Ala Ala Ala Lys Thr Phe Ser
    130                 135                 140

Pro Arg Val Arg Arg Ala Thr Thr Ser Arg Thr Glu Arg Ile Trp Pro
145                 150                 155                 160

Gly Gly Val Ile Pro Tyr Val Ile Gly Gly Asn Phe Thr Gly Ser Gln
                165                 170                 175

Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Glu Lys His Thr Cys
            180                 185                 190

Val Thr Phe Ile Glu Arg Thr Asp Glu Glu Ser Phe Ile Val Phe Ser
        195                 200                 205

Tyr Arg Thr Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg Gly Gly Gly
    210                 215                 220

Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe Gly Ile Val
225                 230                 235                 240

Ala His Glu Leu Gly His Val Val Gly Phe Trp His Glu His Thr Arg
                245                 250                 255

Pro Asp Arg Asp Gln His Val Thr Ile Ile Arg Glu Asn Ile Gln Pro
            260                 265                 270

Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Ala Gly Glu Val Ser Ser
        275                 280                 285

Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr Ala Arg Asn
    290                 295                 300

Thr Phe Ser Arg Gly Val Phe Leu Asp Thr Ile Leu Pro Arg Gln Asp
305                 310                 315                 320
```

```
Asp Asn Gly Val Arg Pro Thr Ile Gly Gln Arg Val Arg Leu Ser Gln
                325                 330                 335

Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro Ala Cys Gly
            340                 345                 350

Glu Thr Leu Gln Asp Thr Thr Gly Asn Phe Ser Ala Pro Gly Phe Pro
        355                 360                 365

Asn Gly Tyr Pro Ser Tyr Ser His Cys Val Trp Arg Ile Ser Val Thr
    370                 375                 380

Pro Gly Glu Lys Ile Val Leu Asn Phe Thr Ser Met Asp Leu Phe Lys
385                 390                 395                 400

Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp Gly Tyr Trp
                405                 410                 415

Arg Lys Ala Pro Leu Leu Gly Arg Phe Cys Gly Asp Lys Ile Pro Glu
            420                 425                 430

Pro Leu Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe Arg Ser Ser
        435                 440                 445

Ser Asn Ile Leu Gly Lys Gly Phe Phe Ala Ala Tyr Glu Ala Thr Cys
    450                 455                 460

Gly Gly Asp Met Asn Lys Asp Ala Gly Gln Ile Gln Ser Pro Asn Tyr
465                 470                 475                 480

Pro Asp Asp Tyr Arg Pro Ser Lys Glu Cys Val Trp Arg Ile Thr Val
                485                 490                 495

Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ala Phe Glu Ile Glu
            500                 505                 510

Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg Asp Gly Pro
        515                 520                 525

Thr Glu Glu Ser Ala Leu Ile Gly His Phe Cys Gly Tyr Glu Lys Pro
    530                 535                 540

Glu Asp Val Lys Ser Ser Ser Asn Arg Leu Trp Met Lys Phe Val Ser
545                 550                 555                 560

Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Ala Asn Phe Phe Lys Glu
                565                 570                 575

Val Asp Glu Cys Ser Trp Pro Asp His Gly Gly Cys Glu His Arg Cys
            580                 585                 590

Val Asn Thr Leu Gly Ser Tyr Lys Cys Ala Cys Asp Pro Gly Tyr Glu
        595                 600                 605

Leu Ala Ala Asp Lys Lys Met Cys Glu Val Ala Cys Gly Gly Phe Ile
    610                 615                 620
```

```
Thr Lys Leu Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro Lys Glu Tyr
625                 630                 635                 640

Pro Thr Asn Lys Asn Cys Val Trp Gln Val Val Ala Pro Ala Gln Tyr
                645                 650                 655

Arg Ile Ser Leu Gln Phe Glu Val Phe Glu Leu Glu Gly Asn Asp Val
            660                 665                 670

Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Ser Pro Asp Ala
        675                 680                 685

Lys Leu His Gly Arg Phe Cys Gly Ser Glu Thr Pro Glu Val Ile Thr
    690                 695                 700

Ser Gln Ser Asn Asn Met Arg Val Glu Phe Lys Ser Asp Asn Thr Val
705                 710                 715                 720

Ser Lys Arg Gly Phe Arg Ala His Phe Phe Ser Asp Lys Asp Glu Cys
                725                 730                 735

Ala Lys Asp Asn Gly Gly Cys Gln His Glu Cys Val Asn Thr Phe Gly
            740                 745                 750

Ser Tyr Leu Cys Arg Cys Arg Asn Gly Tyr Trp Leu His Glu Asn Gly
        755                 760                 765

His Asp Cys Lys Glu Ala Gly Cys Ala His Lys Ile Ser Ser Val Glu
    770                 775                 780

Gly Thr Leu Ala Ser Pro Asn Trp Pro Asp Lys Tyr Pro Ser Arg Arg
785                 790                 795                 800

Glu Cys Thr Trp Asn Ile Ser Ser Thr Ala Gly His Arg Val Lys Leu
                805                 810                 815

Thr Phe Asn Glu Phe Glu Ile Glu Gln His Gln Glu Cys Ala Tyr Asp
            820                 825                 830

His Leu Glu Met Tyr Asp Gly Pro Asp Ser Leu Ala Pro Ile Leu Gly
        835                 840                 845

Arg Phe Cys Gly Ser Lys Lys Pro Asp Pro Thr Val Ala Ser Gly Ser
    850                 855                 860

Ser Met Phe Leu Arg Phe Tyr Ser Asp Ala Ser Val Gln Arg Lys Gly
865                 870                 875                 880

Phe Gln Ala Val His Ser Thr Glu Cys Gly Gly Arg Leu Lys Ala Glu
                885                 890                 895

Val Gln Thr Lys Glu Leu Tyr Ser His Ala Gln Phe Gly Asp Asn Asn
            900                 905                 910

Tyr Pro Ser Glu Ala Arg Cys Asp Trp Val Ile Val Ala Glu Asp Gly
        915                 920                 925
```

```
Tyr Gly Val Glu Leu Thr Phe Arg Thr Phe Glu Val Glu Glu Glu Ala
    930                 935                 940

Asp Cys Gly Tyr Asp Tyr Met Glu Ala Tyr Asp Gly Tyr Asp Ser Ser
945                 950                 955                 960

Ala Pro Arg Leu Gly Arg Phe Cys Gly Ser Gly Pro Leu Glu Glu Ile
                965                 970                 975

Tyr Ser Ala Gly Asp Ser Leu Met Ile Arg Phe Arg Thr Asp Asp Thr
            980                 985                 990

Ile Asn Lys Lys Gly Phe His Ala Arg Tyr Thr Ser Thr Lys Phe Gln
        995                1000                1005

Asp Ala Leu His Met Lys Lys
   1010                1015


<210> 98
<211> 823
<212> PRT
<213> Homo sapiens

<400> 98
Met Pro Gly Val Ala Arg Leu Pro Leu Leu Leu Gly Leu Leu Leu Leu
  1               5                  10                  15

Pro Arg Pro Gly Arg Pro Leu Asp Leu Ala Asp Tyr Thr Tyr Asp Leu
             20                  25                  30

Ala Glu Glu Asp Asp Ser Glu Pro Leu Asn Tyr Lys Asp Pro Cys Lys
         35                  40                  45

Ala Ala Ala Phe Leu Gly Asp Ile Ala Leu Asp Glu Glu Asp Leu Arg
     50                  55                  60

Ala Phe Gln Val Gln Gln Ala Val Asp Leu Arg Arg His Thr Ala Arg
 65                  70                  75                  80

Lys Ser Ser Ile Lys Ala Ala Val Pro Gly Asn Thr Ser Thr Pro Ser
                 85                  90                  95

Cys Gln Ser Thr Asn Gly Gln Pro Gln Arg Gly Ala Cys Gly Arg Trp
            100                 105                 110

Arg Gly Arg Ser Arg Ser Arg Arg Ala Ala Thr Ser Arg Pro Glu Arg
        115                 120                 125

Val Trp Pro Asp Gly Val Ile Pro Phe Val Ile Gly Gly Asn Phe Thr
    130                 135                 140

Gly Ser Gln Arg Ala Val Phe Arg Gln Ala Met Arg His Trp Glu Lys
145                 150                 155                 160

His Thr Cys Val Thr Phe Leu Glu Arg Thr Asp Glu Asp Ser Tyr Ile
                165                 170                 175
```

```
Val Phe Thr Tyr Arg Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg
            180                 185                 190

Gly Gly Gly Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe
        195                 200                 205

Gly Ile Val Val His Glu Leu Gly His Val Val Gly Phe Trp His Glu
    210                 215                 220

His Thr Arg Pro Asp Arg Asp Arg His Val Ser Ile Val Arg Glu Asn
225                 230                 235                 240

Ile Gln Pro Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Pro Gln Glu
                245                 250                 255

Val Glu Ser Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr
            260                 265                 270

Ala Arg Asn Thr Phe Ser Arg Gly Ile Phe Leu Asp Thr Ile Val Pro
        275                 280                 285

Lys Tyr Glu Val Asn Gly Val Lys Pro Pro Ile Gly Gln Arg Thr Arg
    290                 295                 300

Leu Ser Lys Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro
305                 310                 315                 320

Ala Cys Gly Glu Thr Leu Gln Asp Ser Thr Gly Asn Phe Ser Ser Pro
                325                 330                 335

Glu Tyr Pro Asn Gly Tyr Ser Ala His Met His Cys Val Trp Arg Ile
            340                 345                 350

Ser Val Thr Pro Gly Glu Lys Ile Ile Leu Asn Phe Thr Ser Leu Asp
        355                 360                 365

Leu Tyr Arg Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp
    370                 375                 380

Gly Phe Trp Arg Lys Ala Pro Leu Arg Gly Arg Phe Cys Gly Ser Lys
385                 390                 395                 400

Leu Pro Glu Pro Ile Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe
                405                 410                 415

Arg Ser Ser Ser Asn Trp Val Gly Lys Gly Phe Phe Ala Val Tyr Glu
            420                 425                 430

Ala Ile Cys Gly Gly Asp Val Lys Lys Asp Tyr Gly His Ile Gln Ser
        435                 440                 445

Pro Asn Tyr Pro Asp Asp Tyr Arg Pro Ser Lys Val Cys Ile Trp Arg
    450                 455                 460

Ile Gln Val Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ser Phe
465                 470                 475                 480
```

```
Glu Ile Glu Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg
                485                 490                 495

Asp Gly His Ser Glu Ser Ser Thr Leu Ile Gly Arg Tyr Cys Gly Tyr
            500                 505                 510

Glu Lys Pro Asp Asp Ile Lys Ser Thr Ser Ser Arg Leu Trp Leu Lys
        515                 520                 525

Phe Val Ser Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Val Asn Phe
    530                 535                 540

Phe Lys Glu Val Asp Glu Cys Ser Arg Pro Asn Arg Gly Gly Cys Glu
545                 550                 555                 560

Gln Arg Cys Leu Asn Thr Leu Gly Ser Tyr Lys Cys Ser Cys Asp Pro
                565                 570                 575

Gly Tyr Glu Leu Ala Pro Asp Lys Arg Arg Cys Glu Ala Ala Cys Gly
            580                 585                 590

Gly Phe Leu Thr Lys Leu Asn Gly Ser Ile Thr Ser Pro Gly Trp Pro
        595                 600                 605

Lys Glu Tyr Pro Pro Asn Lys Asn Cys Ile Trp Gln Leu Val Ala Pro
    610                 615                 620

Thr Gln Tyr Arg Ile Ser Leu Gln Phe Asp Phe Phe Glu Thr Glu Gly
625                 630                 635                 640

Asn Asp Val Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Thr
                645                 650                 655

Ala Asp Ser Lys Leu His Gly Lys Phe Cys Gly Ser Glu Lys Pro Glu
            660                 665                 670

Val Ile Thr Ser Gln Tyr Asn Asn Met Arg Val Glu Phe Lys Ser Asp
        675                 680                 685

Asn Thr Val Ser Lys Lys Gly Phe Lys Ala His Phe Phe Ser Val Leu
    690                 695                 700

Glu Gly Ala Gly Asp Arg His Ser His Leu Ser Gly Leu Glu Leu Leu
705                 710                 715                 720

Leu Cys Pro His Ala Leu Val Asp Thr Val Pro Ala Pro Pro Ser Ala
                725                 730                 735

Leu His Gly Asp Thr His Ala His Thr His Thr His Val His Thr His
            740                 745                 750

Cys Pro Ile Ala Gln Glu Thr Cys Arg Gly Pro Pro Leu Gly Ala Ser
        755                 760                 765

Arg Leu Ser Pro Gln Gly Pro Gly His Leu Thr Leu Ala Pro Gln Glu
    770                 775                 780
```

```
Gly Ser Tyr Leu Asp Phe Trp Asp Thr His Arg Gly Asp Pro Lys Pro
785                 790                 795                 800

Arg Arg Arg Arg Lys Ser Leu Lys Thr Phe Ser Leu Thr Pro Ala Thr
                805                 810                 815

Phe Arg Gly Ile Trp Ala Leu
            820
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<210> 99
<211> 1019
<212> PRT
<213> Xenopus laevis

<400> 99

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Met Ser Cys Gly Ser Pro Gln Val Met Met Thr Leu Trp Thr Leu Thr
  1               5                  10                  15

Cys Val Gly Leu Ile Leu Leu Gly Ala Ile Arg Leu Ser Leu Gly Leu
             20                  25                  30

Asp Tyr Asp Leu Glu Ser Phe Asp Tyr Leu Met Glu Asp Asn Pro Glu
         35                  40                  45

Glu Phe Asp Tyr Lys Asp Pro Cys Lys Ala Ala Ala Tyr Trp Gly Asp
     50                  55                  60

Ile Ala Leu Asp Glu Asp Asp Leu Lys Trp Ile Phe Lys Asn Lys Ser
 65                  70                  75                  80

Asn Asp Leu Arg Asn Thr Arg His Asn Gln Thr His Pro Thr Thr Asp
                 85                  90                  95

Asn Phe Ser Glu Lys Leu Gly Thr Gly Ser Gln Asn Glu Thr Ser Ser
            100                 105                 110

Asn Leu Asn Ser Lys Lys Val Lys Lys Gly Ser Arg Leu Lys Leu Leu
        115                 120                 125

Ile Ala Glu Lys Ala Ala Thr Glu Thr Asn Ser Thr Phe Gln Val Gln
    130                 135                 140

Thr Ser Asn Asp Arg Val Arg Arg Ala Ala Thr Ser Arg Thr Glu Arg
145                 150                 155                 160

Ile Trp Pro Gly Gly Ile Ile Pro Tyr Ala Ile Ala Gly Asn Phe Thr
                165                 170                 175

Gly Thr Gln Arg Ala Ile Phe Lys Gln Ala Met Arg His Trp Lys Lys
            180                 185                 190

His Thr Cys Val Thr Phe Val Glu Arg Thr Asp Glu Glu Ser Phe Ile
        195                 200                 205

Val Phe Thr Tyr Arg Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg
```

```
    210                 215                 220

Gly Gly Gly Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe
225                 230                 235                 240

Gly Ile Val Val His Glu Leu Gly His Val Val Gly Phe Trp His Glu
                245                 250                 255

His Thr Arg Pro Asp Arg Asp Glu His Val Ser Ile Ile Arg Glu Asn
            260                 265                 270

Ile Gln Pro Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Pro Gly Glu
        275                 280                 285

Val Ser Ser Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr
    290                 295                 300

Ala Arg Asn Thr Phe Ser Arg Gly Val Phe Leu Asp Thr Ile Leu Pro
305                 310                 315                 320

Arg Arg Ile Asp Thr Ser Val Arg Pro Thr Ile Gly Gln Arg Ile Arg
                325                 330                 335

Leu Ser Gln Gly Asp Ile Ala Gln Ala Lys Lys Leu Tyr Lys Cys Pro
            340                 345                 350

Ala Cys Gly Glu Thr Leu Gln Asp Ser Ser Gly Asn Phe Ser Ala Pro
        355                 360                 365

Gly Tyr Pro Ser Gly Tyr Pro Ser Tyr Thr His Cys Ile Trp Arg Ile
    370                 375                 380

Ser Val Thr Pro Gly Glu Lys Ile Ile Leu Asn Phe Thr Thr Met Asp
385                 390                 395                 400

Leu Phe Lys Ser Arg Leu Cys Trp Tyr Asp Tyr Ile Glu Ile Arg Asp
                405                 410                 415

Gly Tyr Trp Arg Lys Ala Ala Leu Leu Gly Arg Leu Cys Gly Asp Lys
            420                 425                 430

Leu Pro Asp Pro Ile Ile Ser Ser Asp Ser Lys Leu Trp Ile Glu Phe
        435                 440                 445

Arg Ser Ser Ser Asn Ile Leu Gly Lys Gly Phe Phe Ala Ala Tyr Glu
    450                 455                 460

Ala Ile Cys Gly Gly Asp Ile Lys Lys Asp Ser Gly Gln Ile Gln Ser
465                 470                 475                 480

Pro Asn Tyr Pro Asp Asp Tyr Arg Pro Ala Lys Glu Cys Ile Trp Lys
                485                 490                 495

Ile Thr Val Ser Glu Gly Phe Leu Val Gly Leu Ser Phe Gln Ala Phe
            500                 505                 510

Glu Ile Glu Arg His Asp Asn Cys Ala Tyr Asp Tyr Leu Glu Val Arg
```

```
        515                 520                 525

Asp Gly Phe Ser Glu Asp His Ala Leu Ile Gly Arg Phe Cys Gly Tyr
    530                 535                 540

Glu Lys Pro Glu Asp Ile Lys Ser Thr Ser Asn Lys Leu Trp Ile Lys
545                 550                 555                 560

Phe Ala Ser Asp Gly Ser Ile Asn Lys Ala Gly Phe Ser Ala Asn Phe
                565                 570                 575

Phe Lys Glu Met Asp Glu Cys Ser Arg Pro Asp Asn Gly Gly Cys Ser
            580                 585                 590

Gln Arg Cys Val Asn Thr Leu Gly Ser Tyr Lys Cys Val Cys Glu Pro
        595                 600                 605

Gly Phe Glu Leu Thr Ala Asp Lys Lys Ser Cys Glu Ala Ala Cys Gly
    610                 615                 620

Gly Phe Ile Thr Gln Leu Asn Gly Thr Ile Thr Ser Pro Gly Trp Pro
625                 630                 635                 640

Lys Glu Tyr Pro Thr Asn Lys Asn Cys Val Trp Gln Val Val Ala Pro
                645                 650                 655

Ala Gln Tyr Arg Ile Ser Leu Gln Phe Glu Val Phe Glu Leu Glu Gly
            660                 665                 670

Asn Asp Val Cys Lys Tyr Asp Tyr Leu Glu Ile Arg Ser Gly Leu Ser
        675                 680                 685

Ser Glu Ser Lys Leu His Gly Lys Phe Cys Gly Pro Glu Lys Pro Glu
    690                 695                 700

Val Ile Thr Ser Gln Gly Asn Thr Val Arg Ile Glu Phe Lys Ser Asp
705                 710                 715                 720

Asn Thr Val Ser Lys Lys Gly Phe Lys Ala Asn Phe Phe Ser Asp Lys
                725                 730                 735

Asp Glu Cys Ser Lys Asp Asn Gly Gly Cys Gln His Asp Cys Val Asn
            740                 745                 750

Thr Phe Gly Ser Tyr Ile Cys Gln Cys Lys Asn Gly Phe Ile Leu His
        755                 760                 765

Glu Asn Gly His Asp Cys Lys Glu Ala Gly Cys Glu Gln Lys Leu Leu
    770                 775                 780

Asn Ala Glu Gly Thr Ile Ser Ser Pro Asn Trp Pro Glu Lys Tyr Pro
785                 790                 795                 800

Ser Arg Lys Glu Cys Thr Trp Asp Ile Ser Val Thr Ala Gly His Arg
                805                 810                 815

Val Lys Leu Val Phe Thr Asp Phe Glu Ile Glu Gln His Gln Glu Cys
```

```
            820                 825                 830

Ala Tyr Asp His Leu Glu Leu Tyr Asp Gly Pro Asn Gly Lys Ala Ala
        835                 840                 845

Ile Leu Gly Arg Phe Cys Gly Ser Lys Glu Pro Ser Pro Val Val Ala
    850                 855                 860

Ser Thr Asn Asn Met Phe Leu Arg Phe Tyr Ser Asp Ala Ser Val Gln
865                 870                 875                 880

Arg Lys Gly Phe Gln Ala Lys Tyr Ser Pro Glu Cys Gly Gly Arg Leu
                885                 890                 895

Lys Ala Glu Ile Gln Thr Asn Asp Ile Tyr Ser His Ala Gln Phe Gly
            900                 905                 910

Asp Asn Asn Tyr Pro Val Gln Ser Asn Cys Glu Trp Val Ile Val Ala
        915                 920                 925

Glu Asp Gly Tyr Gly Val Glu Leu Ile Phe Gln Thr Phe Glu Ile Glu
    930                 935                 940

Glu Glu Ser Asp Cys Gly Tyr Asp Tyr Met Glu Val Tyr Asp Gly Tyr
945                 950                 955                 960

Asp Ser Thr Ala Pro Arg Leu Gly Arg Tyr Cys Gly Ser Gly Pro Pro
                965                 970                 975

Glu Glu Met Tyr Ser Ala Gly Asp Ser Ile Met Ile Arg Phe His Thr
            980                 985                 990

Asp Asp Thr Ile Asn Lys Lys Gly Phe His Gly Gln Tyr Thr Ser Thr
        995                1000                1005

Lys Phe Gln Asp Ala Leu His Met Arg Arg Lys
   1010                1015


<210> 100
<211> 493
<212> PRT
<213> Rattus norvegicus

<400> 100
Met Ala Asp Ser Lys Pro Leu Arg Thr Leu Asp Gly Asp Pro Val Ala
  1               5                  10                  15

Val Glu Ala Leu Leu Arg Asp Val Phe Gly Ile Val Val Asp Glu Ala
             20                  25                  30

Ile Arg Lys Gly Thr Asn Ala Ser Glu Lys Val Cys Glu Trp Lys Glu
         35                  40                  45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Gln Ser Gln Gly
     50                  55                  60
```

```
Glu Ser Arg Glu Arg Ile Leu Glu Arg Cys Arg Ala Val Ile His Tyr
 65                  70                  75                  80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly
                85                  90                  95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn
            100                 105                 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu
        115                 120                 125

Glu Glu Val Leu Lys Lys Leu Arg Ala Leu Val Gly Trp Asn Thr Gly
    130                 135                 140

Asp Gly Val Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Ile
145                 150                 155                 160

Asn Leu Ala Arg Phe Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu
                165                 170                 175

Arg Ala Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr
            180                 185                 190

Ser Ile Thr Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val
        195                 200                 205

Arg Val Val Lys Ala Asp Glu Arg Gly Lys Met Ile Pro Glu Asp Leu
    210                 215                 220

Glu Arg Gln Ile Ser Leu Ala Glu Ala Glu Gly Ser Val Pro Phe Leu
225                 230                 235                 240

Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu
                245                 250                 255

Asp Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Leu His Val
            260                 265                 270

Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Arg Thr His Arg His
        275                 280                 285

Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His
    290                 295                 300

Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Arg Asp
305                 310                 315                 320

Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu
                325                 330                 335

Phe Gln Gln Asp Lys Phe Tyr Asn Val Ala Leu Asp Thr Gly Asp Lys
            340                 345                 350

Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met
        355                 360                 365
```

```
Trp Lys Ala Gln Gly Gly Gln Gly Leu Glu Trp Arg Ile Asp Gln Ala
    370                 375                 380

Phe Ala Leu Thr Arg Tyr Leu Val Glu Glu Ile Lys Lys Arg Glu Gly
385                 390                 395                 400

Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe
                405                 410                 415

Val Pro Pro Ser Leu Arg Gly Lys Lys Glu Ser Pro Asp Tyr Ser Gln
            420                 425                 430

Arg Leu Ser Gln Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Lys
        435                 440                 445

Gly Thr Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Ala Asn Phe
    450                 455                 460

Phe Arg Met Val Val Ala Asn Pro Ile Leu Val Gln Ala Asp Ile Asp
465                 470                 475                 480

Phe Leu Leu Gly Glu Leu Glu Arg Leu Gly Gln Asp Leu
                485                 490


<210> 101
<211> 493
<212> PRT
<213> Mus musculus

<400> 101
Met Ala Asp Ser Lys Pro Leu Arg Thr Leu Asp Gly Asp Pro Val Ala
  1               5                  10                  15

Val Glu Ala Leu Leu Gln Asp Val Phe Gly Ile Val Val Asp Glu Ala
            20                  25                  30

Ile Leu Lys Gly Thr Ser Ala Ser Glu Lys Val Cys Glu Trp Lys Glu
        35                  40                  45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Gln Ser Gln Gly
    50                  55                  60

Glu Ser Arg Glu Gln Ile Leu Glu Arg Cys Arg Thr Val Ile His Tyr
65                  70                  75                  80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly
                85                  90                  95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn
            100                 105                 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu
        115                 120                 125

Glu Glu Val Leu Lys Lys Leu Arg Ala Leu Val Gly Trp Asn Ser Gly
    130                 135                 140
```

```
Asp Gly Val Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Met
145                 150                 155                 160

Asn Leu Ala Arg Phe Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu
                165                 170                 175

Arg Ala Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr
            180                 185                 190

Ser Ile Thr Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val
        195                 200                 205

Arg Val Val Lys Ala Asp Glu Arg Gly Arg Met Ile Pro Glu Asp Leu
    210                 215                 220

Glu Arg Gln Ile Ile Leu Ala Glu Ala Glu Gly Ser Val Pro Phe Leu
225                 230                 235                 240

Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu
                245                 250                 255

Asp Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Phe His Val
            260                 265                 270

Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Arg Thr His Arg His
        275                 280                 285

Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His
    290                 295                 300

Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Arg Asp
305                 310                 315                 320

Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu
                325                 330                 335

Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys
            340                 345                 350

Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met
        355                 360                 365

Trp Lys Ala Gln Gly Gly Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala
    370                 375                 380

Phe Ala Leu Thr Arg Tyr Leu Val Glu Glu Ile Lys Lys Arg Glu Gly
385                 390                 395                 400

Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe
                405                 410                 415

Val Pro Pro Ser Leu Arg Gly Lys Lys Glu Ser Pro Asp Tyr Ser Gln
            420                 425                 430

Arg Leu Ser Gln Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Lys
        435                 440                 445
```

```
Gly Thr Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Ala Asn Phe
    450                 455                 460

Phe Arg Met Val Val Ala Asn Pro Ile Leu Ala Gln Ala Asp Ile Asp
465                 470                 475                 480

Phe Leu Leu Gly Glu Leu Glu Leu Leu Gly Gln Asp Leu
                485                 490
```

<210> 102
<211> 493
<212> PRT
<213> Homo sapiens

<400> 102

```
Met Ala Asp Ser Glu Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala
  1               5                  10                  15

Val Glu Ala Leu Leu Arg Ala Val Phe Gly Val Val Val Asp Glu Ala
             20                  25                  30

Ile Gln Lys Gly Thr Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu
         35                  40                  45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly
     50                  55                  60

Glu Ser Gln Lys Gln Ile Leu Glu Arg Cys Arg Ala Val Ile Arg Tyr
 65                  70                  75                  80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly
                85                  90                  95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn
            100                 105                 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu
        115                 120                 125

Glu Glu Val Leu Arg Lys Leu Arg Ala Leu Val Gly Trp Ser Ser Gly
    130                 135                 140

Asp Gly Ile Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Val
145                 150                 155                 160

Asn Leu Ala Arg Tyr Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu
                165                 170                 175

Arg Thr Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr
            180                 185                 190

Ser Ile Gln Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val
        195                 200                 205

Arg Val Val Lys Ala Asp Glu Arg Gly Lys Met Val Pro Glu Asp Leu
```

```
    210                 215                 220

Glu Arg Gln Ile Gly Met Ala Glu Ala Glu Gly Ala Val Pro Phe Leu
225                 230                 235                 240

Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu
                245                 250                 255

Glu Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Leu His Val
            260                 265                 270

Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Gln Thr His Arg His
        275                 280                 285

Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His
    290                 295                 300

Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp
305                 310                 315                 320

Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu
                325                 330                 335

Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys
            340                 345                 350

Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met
        355                 360                 365

Trp Lys Ala Gln Gly Asp Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala
    370                 375                 380

Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly
385                 390                 395                 400

Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe
                405                 410                 415

Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu
            420                 425                 430

Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu
        435                 440                 445

Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe
    450                 455                 460

Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp
465                 470                 475                 480

Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu
                485                 490
```

<210> 103
<211> 493
<212> PRT

<213> Homo sapiens

<400> 103

```
Met Ala Asp Ser Glu Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala
  1               5                  10                  15

Val Glu Ala Leu Leu Arg Ala Val Phe Gly Val Val Val Asp Glu Ala
             20                  25                  30

Ile Gln Lys Gly Thr Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu
         35                  40                  45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly
     50                  55                  60

Glu Ser Gln Lys Gln Ile Leu Glu Arg Cys Arg Ala Val Ile Arg Tyr
 65                  70                  75                  80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly
                 85                  90                  95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn
            100                 105                 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu
        115                 120                 125

Glu Glu Val Leu Arg Lys Leu Arg Ala Leu Val Gly Trp Ser Ser Gly
    130                 135                 140

Asp Gly Ile Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Val
145                 150                 155                 160

Asn Leu Ala Arg Tyr Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu
                165                 170                 175

Arg Thr Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr
            180                 185                 190

Ser Ile Gln Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val
        195                 200                 205

Arg Val Val Lys Ala Asp Glu Arg Gly Lys Met Val Pro Glu Asp Leu
    210                 215                 220

Glu Arg Gln Ile Gly Met Ala Glu Ala Glu Gly Ala Val Pro Phe Leu
225                 230                 235                 240

Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu
                245                 250                 255

Gly Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Leu His Val
            260                 265                 270

Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Gln Thr His Arg His
        275                 280                 285
```

```
Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His
    290                 295                 300

Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp
305                 310                 315                 320

Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu
                325                 330                 335

Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys
            340                 345                 350

Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met
        355                 360                 365

Trp Lys Ala Gln Gly Asp Gln Gly Leu Glu Arg Arg Ile Asp Gln Ala
    370                 375                 380

Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly
385                 390                 395                 400

Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe
                405                 410                 415

Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu
            420                 425                 430

Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu
        435                 440                 445

Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe
    450                 455                 460

Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp
465                 470                 475                 480

Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu
                485                 490


<210> 104
<211> 493
<212> PRT
<213> Homo sapiens

<400> 104
Met Ala Asp Ser Glu Ala Leu Pro Ser Leu Ala Gly Asp Pro Val Ala
  1               5                  10                  15

Val Glu Ala Leu Leu Arg Ala Val Phe Gly Val Val Val Asp Glu Ala
             20                  25                  30

Ile Gln Lys Gly Thr Ser Val Ser Gln Lys Val Cys Glu Trp Lys Glu
         35                  40                  45

Pro Glu Glu Leu Lys Gln Leu Leu Asp Leu Glu Leu Arg Ser Gln Gly
     50                  55                  60
```

```
Glu Ser Gln Lys Gln Ile Leu Glu Arg Cys Arg Ala Val Ile Arg Tyr
 65                  70                  75                  80

Ser Val Lys Thr Gly His Pro Arg Phe Phe Asn Gln Leu Phe Ser Gly
                 85                  90                  95

Leu Asp Pro His Ala Leu Ala Gly Arg Ile Ile Thr Glu Ser Leu Asn
            100                 105                 110

Thr Ser Gln Tyr Thr Tyr Glu Ile Ala Pro Val Phe Val Leu Met Glu
        115                 120                 125

Glu Glu Val Leu Arg Lys Leu Arg Ala Leu Val Gly Trp Ser Ser Gly
    130                 135                 140

Asp Gly Ile Phe Cys Pro Gly Gly Ser Ile Ser Asn Met Tyr Ala Val
145                 150                 155                 160

Asn Leu Ala Arg Tyr Gln Arg Tyr Pro Asp Cys Lys Gln Arg Gly Leu
                165                 170                 175

Arg Thr Leu Pro Pro Leu Ala Leu Phe Thr Ser Lys Glu Cys His Tyr
            180                 185                 190

Ser Ile Gln Lys Gly Ala Ala Phe Leu Gly Leu Gly Thr Asp Ser Val
        195                 200                 205

Arg Val Val Lys Ala Asp Glu Arg Gly Lys Met Val Pro Glu Asp Leu
    210                 215                 220

Glu Arg Gln Ile Gly Met Ala Glu Ala Glu Gly Ala Val Pro Phe Leu
225                 230                 235                 240

Val Ser Ala Thr Ser Gly Thr Thr Val Leu Gly Ala Phe Asp Pro Leu
                245                 250                 255

Glu Ala Ile Ala Asp Val Cys Gln Arg His Gly Leu Trp Leu His Val
            260                 265                 270

Asp Ala Ala Trp Gly Gly Ser Val Leu Leu Ser Gln Thr His Arg His
        275                 280                 285

Leu Leu Asp Gly Ile Gln Arg Ala Asp Ser Val Ala Trp Asn Pro His
    290                 295                 300

Lys Leu Leu Ala Ala Gly Leu Gln Cys Ser Ala Leu Leu Leu Gln Asp
305                 310                 315                 320

Thr Ser Asn Leu Leu Lys Arg Cys His Gly Ser Gln Ala Ser Tyr Leu
                325                 330                 335

Phe Gln Gln Asp Lys Phe Tyr Asp Val Ala Leu Asp Thr Gly Asp Lys
            340                 345                 350

Val Val Gln Cys Gly Arg Arg Val Asp Cys Leu Lys Leu Trp Leu Met
        355                 360                 365
```

```
Trp Lys Ala Gln Gly Asp Gln Gly Pro Glu Arg Arg Ile Asp Gln Ala
    370                 375                 380

Phe Val Leu Ala Arg Tyr Leu Val Glu Glu Met Lys Lys Arg Glu Gly
385                 390                 395                 400

Phe Glu Leu Val Met Glu Pro Glu Phe Val Asn Val Cys Phe Trp Phe
                405                 410                 415

Val Pro Pro Ser Leu Arg Gly Lys Gln Glu Ser Pro Asp Tyr His Glu
            420                 425                 430

Arg Leu Ser Lys Val Ala Pro Val Leu Lys Glu Arg Met Val Lys Glu
        435                 440                 445

Gly Ser Met Met Ile Gly Tyr Gln Pro His Gly Thr Arg Gly Asn Phe
    450                 455                 460

Phe Arg Val Val Val Ala Asn Ser Ala Leu Thr Cys Ala Asp Met Asp
465                 470                 475                 480

Phe Leu Leu Asn Glu Leu Glu Arg Leu Gly Gln Asp Leu
                485                 490
```

<210> 105
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 105
ccatgtggca gctgaggctt cat 23

<210> 106
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 106
aaagccccag gtcctcttgc tagct 25

<210> 107
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 107
ggatgaacca gactttgaat agcagtg 27

<210> 108
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 108
ggctctcaag cccccatctc 20

<210> 109
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 109
atgcgaagtc actcttacct ctgatgat 28

<210> 110
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 110
gggagctgat cttgagttat ttaacatagc 30

<210> 111
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 111

ctgaatggaa ccatcaccag c 21

<210> 112
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 112
atcagcacta tttcttcatg tgcagg 26

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 113
ctgcacttgg ctggaactta 20

<210> 114
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 114
tttcatctcc tactccaggt gtacca 26

<210> 115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 115
atctccacag gccctgtaat 20

<210> 116
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 116
ccagccatgc tcagagtgac t 21

<210> 117
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 117
ttgccaacag caaggtcaat gccac 25

<210> 118
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 118
cgccactgtg gtcgatcat 19

<210> 119
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 119
ccacagtttg ggatacagaa caatt 25

<210> 120
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 120
actgtgcttc caacctggta gccctga 27

<210> 121
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 121
agccttttg acaacggaag ag 22

<210> 122
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 122
aagctggagt atcaggccta tga 23

<210> 123
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 123
agagtgccca gacccagagc ccttt 25

<210> 124
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 124
ctcccctcac aatgccattg 20

<210> 125
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 125
ctgaagctgg catggtactt aa 22

<210> 126
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 126
cagtcctttc tctttgaacg acagcg 26

<210> 127
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 127
ttgtaggctt caatctcttc ca 22

<210> 128
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 128
tgctatgaaa ggcaagcata a 21

<210> 129
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 129
tgaatgccac aactttatca aagtatttg 29

<210> 130
<211> 22
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 130
aaaaccatct catcgtttct tg 22

<210> 131
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 131
cagaagctgt tccgagaagt c 21

<210> 132
<211> 26
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 132
atgaagggcc taaaccaccc caacat 26

<210> 133
<211> 22
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<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 133
caatcacctc aaagagcttc ac 22

<210> 134
<211> 19
<212> DNA
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<220>
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<400> 134
agaacacccc tggctccta 19

<210> 135
<211> 24
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<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 135
acaccagcct gtgaccctgg ctat 24

<210> 136
<211> 22
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<220>
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<400> 136
gtttcacact cgttcacatc ct 22

<210> 137
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<220>
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<400> 137
gcaacagcat ggtgatctg 19

<210> 138

<211> 26
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<220>
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primer

<400> 138
ctttcgaatg cacaggaacc ccttct 26

<210> 139
<211> 21
<212> DNA
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primer

<400> 139
cgccaggttg aggatataga t 21

<210> 140
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primer

<400> 140
ctgcaaccac atgatcatac aa 22

<210> 141
<211> 26
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<220>
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primer

<400> 141
atcagggaac ctgaccacac ttgtaa 26

<210> 142
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<212> DNA
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<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 142
atggatgaag acatgctcct tt 22

<210> 143
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<213> Artificial Sequence

<220>
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primer

<400> 143
caattttggt tctggagaaa ga 22

<210> 144
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
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primer

<400> 144
tctcagtgcc gatggacctc atagaa 26

<210> 145
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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primer

<400> 145
cagtgaagca cataggtggt tt 22

<210> 146
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 146
ctgggagaga catacgactt tg 22

<210> 147
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<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 147
cccggaacac cttctcaaga ggagt 25

<210> 148
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 148
gggaaggatg gtgtctaaga aa 22

<210> 149
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 149
tgtgcttttg ttagccaga 19

<210> 150
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<212> DNA
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primer

<400> 150
catcaatctg cttgctacac ttctcacca 29

<210> 151
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<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 151
ccaaagccct cggaac 16

<210> 152
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 152
tgtcgggatg tcatacacta ca 22

<210> 153
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 153
tgtcaaaaca gaccacccaa gatttt 26

<210> 154
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide primer

<400> 154
atcaagtcca gcatacaatt gg 22

<210> 155
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: oligonucleotide primer

<400> 155
aagctttgtc agcgcaaccc ccaggtctgc ggcccagg 38

<210> 156
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 156
ctcgagacag cgtccagtca tggggtcaaa ctcttcc 37

<210> 157
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 157
gagaacacgc caggcagctt 20

<210> 158
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 158
ctcctttcac tgtgcctgcc c 21

<210> 159
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 159
tgtccttctg gccaccacc 19

<210> 160
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 160
gagcctcttg cctcgacgtt gacgagt 27

<210> 161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 161
gtgtccggga ctgcgatcct 20

<210> 162
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 162
cggtggcact cgtccacat 19

<210> 163
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 163
ctgccgtgtt gtcacagcg 19

<210> 164
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 164
aggccctgca ctggaagga 19

<210> 165
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 165
gtcggtagcc aggggcacaa gta 23

<210> 166
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 166
agtcccggac acagcggta 19

<210> 167
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
oligonucleotide primer

<400> 167
tgtcccttga tctgtcacaa tggcggtgtg tgc 33